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99 1. Introduction, Process History, Land Acknowledgement, and 100 Governance Guidelines

101 1.1 Introduction to this document

102 This document serves as the Comprehensive Management Plan for the Andrews Community Forest
103 (ACF). The ACF Management Plan was initially prepared by the Interim Community Forest Steering
104 Committee which comprised Berne Broudy, Cecilia Danks, Brad Elliott, Willie Lee, Hannah Phillips
105 (Chair), Wright Preston, Guy Roberts, and Elizabeth Wright. Assistance was provided from Ethan Tapper
106 (Chittenden County Forester), Bob Heiser, Cara Montgomery, Rebecca Roman (Vermont Land Trust),
107 Drew Pollak-Bruce, Liz Grades, Ellie Wachtel, Taylor Luneau (SE Group), Dori Barton (Arrowwood
108 Environmental). The first iteration of this document was accepted by the Selectboard in November 2018
109 including Bard Hill, David Sanders, Steve Ackerman, Roger Brown, Christy Witters, and Josh Arneson.
110 The Management Plan underwent a full revision in 2022 by the current Andrews Community Forest
111 Committee (ACFC) to add an Indigenous land use acknowledgment, replace the original recreational trail
112 design concept with a final recreational trail design approved for construction, clarify ambiguities,
113 reorganize the table of contents for ease of reference, generally update language, (the initial document
114 language was all in “future tense”) and highlight four years of decisions and accomplishments based on
115 the ACFC’s experience managing the forest. This document was submitted to the Richmond Selectboard
116 in the [REDACTED] of 2022 by the ACFC. Committee members involved in the revision process included
117 current members: Jesse Cray (Chair), Cecilia Danks, Jim Monahan, Caitlin Littlefield, Nick Neverisky,
118 Amy Powers, Daniel Schmidt, Melissa Wolaver, and Chase Rosenberg; and former members Ellen Kraft
119 McCune and Tyler Merritt. The revised Management Plan was approved by the Richmond Selectboard on
120 [REDACTED].

121 1.2 Acquisition of the Andrews Community Forest

122 In 2018, the Town of Richmond, with the assistance of Vermont Land Trust, purchased a 428-acre,
123 largely wooded parcel from the Andrews family to create a new community forest. Simultaneous with the
124 sale, a Conservation Easement was conveyed to both the Vermont Land Trust and the Vermont Housing
125 and Conservation Board to protect the property’s natural resources and ensure public access in perpetuity.

126 1.3 Indigenous Land Acknowledgment

127 Andrews Community Forest is located within Ndaakina (in-DAH-kee-NAH), the homeland of the
128 Western Abenaki people, who have a unique connection to this land and have been its traditional stewards
129 for millennia. For many generations before the European colonists arrived, the Abenaki people harvested
130 animals, nuts, plants, berries, fiber, and timber in these forests, without degrading their ecological health.
131 The Indigenous people who preceded the colonists created an extensive system of trails throughout the
132 Green Mountains that attest to the extended relationships between the Abenaki people and other tribes,
133 who also used these forests, and who took refuge here as the settlers drove them from their homes.

134 The Town of Richmond acknowledges that we have access to this land because it was taken without
135 consent and that our ability to make decisions about its management rests on this historic injustice. The
136 Andrews Community Forest Committee therefore acknowledges the Abenaki people’s rights to use this
137 land in perpetuity and welcomes the Abenaki people as partners in our forest management. We aim to

138 honor and respect the Abenaki people through responsible forest management and sustainable land use.
139 We will strive to incorporate Traditional Ecological Knowledge into our management practices to foster a
140 healthy forest community and to restore a healthy balance between human needs and the needs of the
141 nonhuman people of the forest (see Appendix D). We say their name, and we name trails using the
142 Western Abenaki language, to remind us that the Abenaki people are the Original People of the
143 Dawnland, N Dakinna, out of respect for their culture and special relationship to the land, and to
144 acknowledge their historic and ongoing contributions to our community.

145 **1.4 Governance of the Andrews Community Forest**

146 As a municipally-owned property, the Town of Richmond Selectboard is ultimately responsible for the
147 management and stewardship of the Andrews Community Forest. However, this responsibility has been
148 delegated to the Community Forest Stewardship Committee, now referred to as the “Andrews
149 Community Forest Committee,” or “ACFC”. The ACFC is charged with meeting the priorities and goals
150 outlined in the Town Forest Management Plan or as directed by the Selectboard or Town Manager.
151 Further information about the governance of the Community Forest can be found in Appendix A: Steering
152 Committee Bylaws.

153
154 The ACFC is a seven-to-nine person committee. The Richmond Conservation Commission and the
155 Richmond Trails Committee shall each appoint a current member of their respective committee to sit on
156 the ACFC. Additionally, the Conservation Commission and Trails Committee shall each recommend one
157 person that is not a member of their respective committee for election to the ACFC. In order to
158 incorporate Indigenous perspectives and traditional ecological knowledge into ACF management, the
159 ACFC will seek to fill at least one of its seats with an Abenaki tribal citizen (see Appendix D). ACFC will
160 engage with the local Abenaki community to identify potential ACFC members.

161 **1.4.1 Purpose of the Committee**

162 The purpose of the Andrews Community Forest Committee is to:

- 163 ● Serve as representatives of the Town in decisions related to the management of the Andrews
164 Community Forest, with ultimate approval of the Selectboard.
- 165 ● Oversee management of the Community Forest responsibly and in accordance with the
166 Comprehensive Management Plan, the Conservation Easement, and the Forest Management Plan.
- 167 ● Act as a liaison with the Vermont Land Trust when input or approval is needed.
- 168 ● Lead the management planning process whenever updates are needed to the Comprehensive
169 Management Plan.
- 170 ● Provide regular opportunities for public engagement with the Community Forest and in the
171 planning/management of this community-owned property.
- 172 ● Educate the public about the Community Forest.

173

174 Furthermore, the ACFC agrees to strive towards the following guiding tenets:

- 175 ● Demonstrate an ongoing commitment to providing meaningful public access and outdoor
176 recreation opportunities while simultaneously providing meaningful natural resource protection.
- 177 ● Demonstrate an ongoing commitment to learning more about the property and its natural history.
- 178 ● Demonstrate an ongoing commitment by the committee to work together across differences as
179 representatives of the Town and all of its residents.

180 1.5 Management Plan Development

181 Upon purchasing the property, the Selectboard established an Interim Community Forest Steering
182 Committee (see section 1.1) to develop a Comprehensive Management Plan and governance structure for
183 the Community Forest, subject to final approval by the Selectboard. The Interim Committee prepared an
184 Interim Management Plan to provide short-term guidelines for the management of the property and allow
185 “breathing room” for the development of the Comprehensive Management Plan. The Interim
186 Management Plan was signed by the Town and approved by the Vermont Land Trust in March 2018
187 (Appendix H).

188
189 Meanwhile, the Town, through a grant from the Vermont Urban and Community Forestry Program,
190 worked to develop the full Management Plan with the consulting groups SE Group and Arrowwood
191 Environmental. Beginning in 2018, these groups assisted in management planning by leading the public
192 input process, conducting environmental analyses, and drafting the plan. The first Management Plan was
193 adopted by the Select Board in November 2018 in compliance with conditions attached to a grant from
194 the US Forest Service.

195 1.5.1 History of the Public Input Process

196 Public input opportunities into the initial management planning process in 2017 and 2018 were advertised
197 by email, social media, Front Porch Forum, via signage in Town, and in the local print newspaper, the
198 TimesInk! This process was critical to ensure the Management Plan reflects the interests of Richmond
199 residents, and to give the Committee an opportunity to consider and reach consensus on important
200 management issues such as hunting, trail development, and more. A chart showing the evolution of
201 allowed/prohibited uses in the Community Forest can be found in Appendix C.

202
203 Results from the public input process are available on the [Town of Richmond website](#) and participation is
204 summarized below:

- 205 ● *Visioning Workshop* – A public workshop was held on January 18, 2018 with about 80
206 community members in attendance. Attendees gave their input on a vision, management balance,
207 and appropriate activities and facilities for the community forest.
- 208 ● *Visioning Survey* – A survey, open from January to March 2018, asked similar questions to those
209 posed at the workshop. The survey received 317 responses from residents of Richmond and
210 surrounding towns.
- 211 ● *Stakeholder Interviews* – Small group interviews were held on June 14 and June 18, 2018 to
212 discuss the future of the property with five stakeholder groups: hunters/trappers, neighbors,
213 education, trail-based recreation, natural resources, and others. Other interested members of the
214 public were invited to join.
- 215 ● *Draft Strategies Workshop* – A public workshop was held on July 12, 2018 to present the
216 progress of the plan and hear feedback from the community on draft strategies for the future
217 development and management of the property.
- 218 ● *Community Forest Committee* – The Community Forest Committee met twice a month through
219 this process. The committee also met as smaller working groups to inventory and plan for each
220 resource in the property.
- 221 ● *Public Input on Draft Management Plans* -- 44 people attended a presentation of the 1st draft of
222 the Management Plan on 9/20/18; an additional 14 people submitted comments in writing. The
223 comment period was open for two weeks. A second draft plan was released on 10/21/18, followed
224 by a two-week comment period and including another public meeting.

225
226 Public input opportunities into the 2022 Management Plan revision, including public engagement
227 regarding the development of the approved trail design and the inclusion of an Indigenous land use
228 acknowledgment, occurred in 2020-2022. In addition to the monthly open meetings convened by the
229 ACFC in which members of the public were welcomed to offer their perspectives and ask questions, the
230 ACFC carried out the following specific public engagement efforts to further ensure a robust community
231 engagement process:

- 232 ● September 2020: Initial draft of proposed trail design RFP was reviewed and shared with
233 members of the Richmond public, with their feedback incorporated; ACFC approved to establish
234 a joint RFP for ecological review and trail design services requiring the ecologist and trail
235 designer to collaboratively establish a proposed trail design
- 236 ● May 2021: Public walk held at ACF with Arrowwood and Sinuosity (professional ecologist/trail
237 build team) to walk part of the proposed trail and discuss routing
- 238 ● June 2021: Public presentation by Arrowwood and Sinuosity of proposed design; representatives
239 from VLT and SB invited and expressed support
- 240 ● March 2022: Online public comments form launched seeking feedback on ACFC's approved
241 preliminary trail design (*notice of public comment period and options for providing feedback*
242 *communicated via Front Porch Forum, Facebook, Instagram and the Town Forest website*)
- 243 ● April - May 2022: 128 public comments received on proposed trail design. ACFC thematically
244 codes comments and publically releases formal responses to the 25 emergent themes/concerns
- 245 ● May - October 2022: Members of the ACFC met 1:1 with community members who had been
246 particularly engaged during public meetings and via other forums (e.g., Front Porch Forum, the
247 Times Ink).
- 248 ● TBD: professionally facilitated public meeting to solicit feedback related to proposed
249 Management Plan revision (*include # attendees, details on outcome, etc.*)

250 1.5.2 History of Expert Guidance Sought by ACF Committee

251 Members of the ACF consulted with the following experts in order to inform the development of the Trail
252 Design and the overall revision of the Comprehensive Management Plan.

- 254 ● May 2021: Public walk with the ecologists and trail designer (Aaron Worthley, Dori Barton of
255 Arrowwood; Mariah Keagy of Sinuosity). The ACF Committee and members of the public spent
256 about two hours walking the proposed routes in the ACF.
- 257 ● July 2021: Arrowwood and Sinuosity consultants (Aaron Worthley, Dori Barton, Mariah Keagy,
258 Brooke Scatchard) presented to and fielded questions from the ACF Committee and the public
259 about the proposed trail design at an ACF meeting.
- 260 ● June 2022: Consulted with Arrowwood and Sinuosity (Dori Barton and Mariah Keagy) about
261 removing the Ridgeway Trail based on public feedback.
- 262 ● July 2022: Discussion with Arrowwood (Aaron Worthley) about the fine-scale review.
- 263 ● August 2022: Consultation with Community Roots, LLC (Melissa Levy) about facilitation of the
264 community engagement public meeting on revisions to the Comprehensive Management Plan.
- 265 ● August 2022: Sought advice from Nick Fortin (Deer & Moose Project Leader, Department of
266 Fish & Wildlife, Vermont Agency of Natural Resources) on how to manage deer wintering areas
267 in the context of recreational use.

- 268 ● Various and Ongoing: Consulted with Rebecca Roman of the Vermont Land Trust regarding
269 development of trail design, revising the management plan, and general compliance with the
270 Conservation Easement.
- 271 ● Various and Ongoing: Consulted with Josh Arneson, Richmond Town Manager, on Committee
272 governance, process, and procedures and Selectboard oversight.
- 273 ● Various and Ongoing: Consulted with Judy Rosovsky, Chair of the Conservation Commission on
274 development of the trail design and revised management plan.
- 275 ● Various and Ongoing: Consulted with Willie Lee, Chair of the Trails Committee, on development
276 of the trail design and revised management.

277

278 For the development of the Land Acknowledgment, the accompanying use rights, and the signage and
279 naming suggestions, the following process and expert guidance were engaged.

- 280 ● August 2021: Scott Silverstein and Alexis Latham of Richmond Racial Equity contacted the
281 ACF committee and joined the 8/28/21 meeting to discuss Abenaki access to the forest for
282 hunting, gathering and perhaps holding gatherings, as well as the potential trail naming and
283 interpretive signage. Over the following months and to the present, Scott and Alexis served as
284 leaders and advisors to ACF on this part of the plan revision. They facilitated contacts with
285 Abenaki leaders and culture keepers while leading a collaborative process that resulted in the
286 ACF land acknowledgement, designated use rights, naming and signage proposals and related
287 provisions in Appendix D of this revised plan. They consulted with Jesse Bruchac and Kerry
288 Wood, both tribal citizens, as well as culture keeper Annette Urbschat regarding Abenaki
289 language recommendations for signage and trail names.
- 290 ● October 2021: Chief Don Stevens of the Nulhegan Band of the Coosak Abenaki Nation joined
291 the 10/25/21 ACF meeting to share perspectives on ACF land acknowledgments, Abenaki use
292 rights, and related components.
- 293 ● January 2022: Wording for the Appendix containing the Land Acknowledgment and related
294 components was warned, discussed and final edits discussed by ACF members and the attending
295 public at the 1/6/22 ACF meeting.
- 296 ● January 2022, Rebecca Roman of the Vermont Land Trust reviewed acknowledgment wording
297 and use rights as related to the conservation easement and shared comments at the ACF 1/31/22
298 meeting.
- 299 ● January 2022: Chief Richard Menard of Missisquoi Abenaki Nation joined the 1/31/22 ACF
300 meeting to share perspectives on the Land Acknowledgment and related components. Appendix
301 D was approved by the ACF Committee on January 31, 2022, and is now also incorporated in the
302 appropriate sections of this draft management plan.
- 303 ● July 2022: Rebecca Rouiller of Radiate Art Space, which sponsored the murals of Abenaki
304 culture and language on the Town Center building, agreed to allow use of mural images in ACF
305 signage. Research and consultation with Abenaki artists went into creating those murals, which
306 were dedicated in a traditional ceremony led by Abenaki culture bearer Charles Delaney
307 Megeso.

308

309 1.5.3 Comprehensive Management Plan Updates: Amendments and Revisions

310 This Comprehensive Management Plan is intended to be a living and evolving document. As the Andrews
311 Community Forest is new to public ownership, there is a need to better understand conditions on the
312 ground and respond to new conditions that may arise. Adaptive management is an iterative cycle of

313 evaluating and learning, adjusting, planning, and acting. The ACFC is required to make management
314 decisions based on resource management objectives and current best management practices. In addition, the
315 ACFC is required to gather information on relevant management practices that can guide future management
316 decisions and management plan revisions.

317

318 This plan must be reviewed and updated, at a minimum, every ten years, as required by the Conservation
319 Easement. However, more frequent revisions may be necessary in the early years of municipal ownership
320 as the community's use of the property evolves. The ACFC will plan to discuss potential updates once
321 annually and make changes as needed according to the "adaptive management model" (Figure 1).
322 Updates to the Comprehensive Management Plan can be of two kinds, revisions or amendments, which
323 vary in degree of public outreach and data collection.

324

325 Any *amendments* to the plan, as suggested by Figure 1, may include minor adjustments that improve the
326 effectiveness of management actions or minor changes to wording. Amendments to the plan will, at a
327 minimum, be proposed and warned as part of the ACFC's regular business. Additional public meetings
328 focused on plan amendments are at the discretion of the ACFC.

329

330 Any major changes to the plan objectives or proposed actions require a plan revision, which entails a
331 planning and outreach process that includes scoping of concerns, collection of any needed data, and a
332 public engagement process that invites stakeholders and other residents to provide input on proposed
333 revisions. Such a process may entail a combination of surveys, ecological assessments, field trips, and
334 public meetings dedicated to the plan revision.

335

336 Any changes to the Comprehensive Management Plan, either amendments or revisions, must be reviewed
337 and approved by the Vermont Land Trust and submitted for approval by the Richmond Selectboard. Any
338 activities on the property which are not contemplated in the Management Plan must be reviewed and
339 approved by Vermont Land Trust stewardship staff to ensure compliance with the Conservation Easement
340 (see Appendix C).

341

342 Figure 1. Adaptive Management Model



343
344
345

2. Management Plan

2.1 General Property Description and Background

The Andrews Community Forest is a 428-acre largely forested parcel just outside Richmond Village in Chittenden County. The property is a diverse forestland with two small meadows. It has an abundance of hard-mast stands, predominantly oak and beech, that serve as important habitat for many species of wildlife. The forest includes several patches of Dry Oak Forest, Dry Red Oak-White Pine Forest, and Dry Oak-Hickory-Hophornbeam Forest, which are uncommon natural communities in Vermont. The property also has patches of dense hemlock, and those pockets, combined with its low elevation and southerly aspect, reportedly make it a heavily used winter deer yard. Recent timber harvesting and blowdown events have created patches of young forest and early successional habitat in the west and south of the property.

2.1.2 The Forest In Context

Overall, this forest, especially as part of a larger, connected forest block, is a well-conserved wildlife habitat. The forest is one of eight large parcels that originally inspired the Chittenden County Uplands Conservation Project (CCUCP). The CCUCP is a landscape-scale conservation effort with over a dozen partners working to conserve ecologically and culturally important forest blocks and habitat connectors between and alongside Camel's Hump State Park and Mount Mansfield State Forest. The Andrews Community Forest abuts 6,000 acres of forestland that itself is adjacent to the 72,000-acre Mt. Mansfield

364 Forest Block. This largely conserved forest block is a critical wildlife corridor and has been ranked in the
365 top 3% of the state’s wildlife habitat blocks by the Vermont Department of Fish and Wildlife.

366

367 In terms of water resources, the forest has several headwater streams that flow into the Winooski River
368 and then on to Lake Champlain. The property also includes a small beaver pond and wetlands and at least
369 two vernal pools. The quality of these water resources is directly related to the health of the surrounding
370 forest.

371 **2.2 Timber Management and Forestry Activities**

372 There is a long history of timber management within the forest, as the Andrews family actively managed
373 the forest. In 2011 - 2014, timber management occurred on a western portion of the property. Western
374 areas were previously logged in 2001-2003 and eastern areas were logged in 1994-1997 by
375 Richmond/Huntington loggers Mark and Bruce Moultroup.

376

377 The most recent timber harvest was completed in the spring of 2021 under the direction of Chittenden
378 County Forester, Ethan Tapper, and the work was done by Tim Brown. The ACFC, Vermont Land Trust,
379 and the Select Board Adopted a Forest Management Plan specific to forestry activities in November of
380 2019, and used a ‘zone’ approach that divides the forest into three different management styles for
381 perpetuity and emphasizes a diverse and resilient forest as well as addresses invasive species
382 management. Section 8 of this Comprehensive Management Plan provides more detail about the Forest
383 Management Plan that was crafted by Ethan Tapper and adopted by the Select Board on November 18,
384 2019. Additional timber stand improvement (TSI) activities were completed in the winter of 2022 and
385 included crop tree release as well as selective cutting.

386

387 The forest is capable of providing timber and other forest products into the future. Many forest
388 management roads (also called “logging roads,” or “skid trails”) from previous logging operations still
389 exist in the forest. Some may still serve as a component of a multi-use recreational trail network, provided
390 that drainage and erosion challenges can be mitigated. The use of these trails for recreation should not
391 compromise or preclude their utility as forest management roads into the future.

392 **2.3 Conservation Easement**

393 The Andrews Community Forest is encumbered by a Conservation Easement (“easement”) held by the
394 Vermont Land Trust and the Vermont Housing and Conservation Board (See Appendix). The purposes of
395 the easement are to conserve the property’s natural resources and ecological processes, open space values,
396 provide for non-motorized, non-commercial recreation and education, and involve the public in the
397 management of the property.

398

399 Vermont Land Trust acts as the primary easement steward. As the primary easement steward, Vermont
400 Land Trust will conduct annual monitoring to ensure activities on the property are consistent with the
401 terms of the easement. The easement steward is also the Committee’s primary contact at Vermont Land
402 Trust for reviews and approvals of proposed actions which are not contemplated in the Management Plan.

403

404 The easement requires a Management Plan and any future changes to the Management Plan must be
405 reviewed and approved by Vermont Land Trust. Section 1.B. of the Conservation Easement dictates what
406 information the Management Plan must include. Public input is required for any updates to the Plan.

407 3. Public Access

408 3.1 Town Forest Rules

409 ● General Rules:

- 410 ● The Andrews Community Forest is open to the public year-round from dawn-to-dusk,
411 with exceptions granted outside of these hours for hunting and other forms of quiet
412 recreation which do not disturb neighboring landowners.
- 413 ● As the Original People who stewarded these lands, the Western Abenaki People and other
414 Indigenous Peoples are extended a special invitation to visit the ACF and pursue
415 traditional and contemporary practices as outlined in Appendix D Part 2, and as
416 acknowledged here below.

417 ● Allowed Uses:

- 418 ○ Dispersed pedestrian access is allowed on the property for uses such as hiking, walking,
419 wildlife observation, or cross-country skiing, unless otherwise noted.
- 420 ○ Trail-based recreational activities, such as hiking, walking, mountain biking, cross-
421 country skiing, and other uses, are allowed unless otherwise noted.
- 422 ○ Mountain biking is only allowed on designated trails.
- 423 ○ Snowmobiling is restricted to the VAST trail, and may only be used when the trail is
424 opened by VAST.
- 425 ○ Hunting is allowed on the Andrews Community Forest and is subject to the State of
426 Vermont hunting seasons, rules, and regulations.
 - 427 ■ Temporary tree stands and ground blinds are allowed: from the third Sunday in
428 August through the third Saturday in December, May 1 through May 31, and
429 during any Youth Hunting Day. Tree stands and ground blinds must be erected
430 such that no damage is done to a living tree (except that branches <1” diameter
431 on the main stem may be trimmed). Stands and blinds must have the owner's
432 name and contact information in an easily identifiable location. Stands and blinds
433 that do not conform to these regulations may be confiscated.
- 434 ○ Dogs are allowed on the Andrews Community Forest, subject to the [Town of Richmond](#)
435 [Dog Animal Control Ordinance](#), which indicates that dogs should be on a leash or under
436 voice control.
- 437 ○ The Abenaki People may use ACF for gatherings and ceremonies, including the erection
438 of small, temporary structures relevant to ceremonies. Prior notification of the ACFC is
439 requested for large gatherings.
- 440 ○ The Abenaki People have the right to collect fungi, plants, and plant parts in a sustainable
441 manner, which is described in Appendix D.
- 442 ○ Additional uses not listed here may be considered by the ACF Committee if they comply
443 with town and state law and the Conservation Easement.

444 3.2 Restricted and Prohibited Uses

445 Salient restricted and prohibited uses are highlighted below. For a more comprehensive list of restricted
446 and prohibited uses, reference the Conservation Easement (see Appendix C).

447 ● Restricted Uses:

- 448 ○ Motorized vehicles are not allowed on the property, except for use by those with physical
449 disabilities, snowmobiles using the VAST trail, vehicles required for property
450 management, or in case of emergency.

- 451 ○ Commercial wildcrafting, the collection of mushrooms, berries, herbs, and other forest
452 materials for sale, is restricted to Abenaki People who follow the sustainable practices
453 described in Appendix D.
- 454 ● **Prohibited Uses:**
- 455 ○ Campfires
- 456 ○ Overnight parking
- 457 ○ Horseback riding
- 458 ○ Camping
- 459 ○ New trail development without prior approval of the ACFC.
- 460 ○ Timber harvest outside of the approved Forest Management Plan.
- 461 ○ Trapping. Trapping poses a safety hazard to visitors and their pets and at this time is seen
462 as incompatible with recreational and educational off-trail hiking by residents, school
463 groups, researchers and hunters. Exceptions may be granted by the ACFC in conjunction
464 with the Vermont Land Trust to address animals of concern/natural resource management
465 concerns. Signage will notify visitors of the trap location and purpose.

466 **3.3 Parking**

467 Parking is available off of Route 2 across from Maple Wind Farm, at 1129 East Main Street, Richmond
468 and is permitted to accommodate one parked school bus and five parked cars. The upper landing area can
469 be used for parking during special events. Members of the community will need to submit a proposal
470 suggesting special parking access to the Committee Chair, with Committee review as needed. Requests
471 will be approved on a case-by-case basis. The Town of Richmond is responsible for maintenance and
472 plowing.

473 **3.4 Road Use**

474 Motorized vehicles will be permitted on the VELCO road up to the landing for management purposes or
475 for special events. Above the landing and on the “east road,” only vehicles used in performing
476 management of the Community Forest, VELCO vehicles performing maintenance on the powerlines and
477 access roads, vehicles associated with the use and management of the VAST trail, or vehicles required for
478 use in an emergency will be permitted. Use of any road on the property by motorized vehicle requires
479 permission from the Committee Chair, with the exception of the “east road,” over which Maple Wind
480 Farm has a right-of-way.

481 **4. Geology, Topography, and Climate**

482 **4.1 Biophysical Region**

483 The Andrews Community Forest is located in the Northern Green Mountains biophysical region which
484 contains the state’s highest point (Mount Mansfield), coldest climate, and greatest annual precipitation.
485 Across the biophysical region, the bedrock is primarily acidic, composed of non-calcareous schists,
486 phyllites, gneisses, and granofels. At lower elevations in the region, including the Andrews Community
487 Forest, the forests are dominated by Northern Hardwood Forest natural communities. The heavy
488 precipitation and deep snows of the area, especially at higher elevations, feed some of the state’s largest
489 rivers, including the Winooski.

490 **4.2 Bedrock Geology**

491 Bedrock is the solid rock responsible for the shape of the mountains and valleys, the local topography. In
492 addition, the bedrock affects the fertility and other properties of the soil above it, determining and
493 impacting the vegetation growing on the site. Bedrock is typically below the soil and visible only in rock
494 outcrops or cliffs.

495
496 A location's bedrock is a direct product of its geologic history – folding, faulting, and other geologic
497 events. Those events determined the collection of rocks and minerals found in that location. Those
498 collections are known as bedrock formations and can be anywhere from a few acres to thousands of acres
499 in size.

500
501 The Andrews Community Forest contains both Underhill and Pinnacle bedrock Formations. The western
502 part of the forest, from its northernmost point over is Underhill, and the eastern area is Pinnacle. Both
503 formations are metamorphic sedimentary rocks, formed by sediments collecting at the bottom of an
504 ancient sea, stacking on top of each other, then metamorphosing and compacting into rock during the
505 Taconic Orogeny, the event that created the Green Mountains. As metamorphic rocks, they are typically
506 dense and non-porous and have cracks and visible fractures.

507
508 The Pinnacle Formation is made of schistose greywacke rock, metamorphosed from bits of rock, mud,
509 and debris that had already broken down somewhat from their original state. It is gray to buff in color and
510 the stripes of varying layers in the rock are generally visible. The minerals present are quartz, sericite,
511 biotite, and chlorite. The formation dates back at least to the Cambrian Period, 500 to 630 million years
512 ago.

513
514 The Underhill Formation is a silvery-green color and a combination of phyllite and schist rocks. The
515 minerals present are chlorite, muscovite, and quartz. Compared to the Pinnacle Formation, the Underhill
516 Formation bedrock also dates back to at least the Cambrian Period but has coarser grains.

517 **4.3 Surficial Geology**

518 Surficial geology refers to loose materials deposited above the bedrock layer by wind, water, or glaciers.
519 Like much of the Green Mountain Region, the Andrews Community Forest is covered in rocks deposited
520 when the glaciers receded at the end of the last ice age (roughly 14,000 years ago). Fine silt, pebbles,
521 stones, and boulders of all sizes deposited by glaciers are known as glacial till. The glacial till covers the
522 underlying bedrock surface to form the surface shape of the visible landscape. In addition to glacial till,
523 soil particles deposited by the post-glacial Lake Vermont, which filled much of the Champlain and
524 western Winooski River Valley following the retreat of the Laurentide Ice Sheet up to an elevation of
525 about 600 feet above sea level, cover much of the southern portions of the Andrews Community Forest.

526
527 In the Andrews Community Forest, where the bedrock is not exposed, till covers the land and is the
528 source of stones in the forest's rocky soils. The glacial till is thicker in the valleys and thinner in the
529 uplands. Many of the exposed uplands in the forest have experienced significant post-glacial erosion,
530 leaving only rubble and scattered boulders on top of the bedrock.

531 **4.4 Topography and Aspect**

532 The Andrews Community Forest stretches over 428 acres of mostly south-facing hillside. Elevations
533 range from just below 400' above sea level at the parking area to about 1240' above sea level in the

534 northern corner. Much of the terrain is steep but there are some flatter areas north of the parking lot and
535 along the forest's southeastern boundary.

536 **4.5 Climate**

537 Climate describes the average weather patterns in an area over time, particularly temperature and
538 moisture parameters. Climate is an important consideration in forest management because of its effect on
539 the myriad complex interactions between abiotic and biotic factors that influence forest ecology, and the
540 ability of forests to regenerate, develop, and remain resilient in the face of disturbance. While the
541 Andrews Community Forest is part of the Northern Green Mountains biophysical region, which has a
542 cooler climate and more precipitation than other portions of the State, it is significantly influenced by the
543 Champlain Valley biophysical region, which is warmer and features a longer growing season than most
544 other parts of Vermont. Coupled with its southerly aspect, this produces a forest dominated by tree
545 species adapted to warm, dry sites with poorer soils on upper elevations, and those adapted to slightly
546 richer forest soils on lower elevations (due to the influence of Lacustrine deposits).

547 **4.5.1 Management Objectives**

- 548 ● Protect the physical attributes and processes of Andrews Community Forest.
- 549 ● Ensure that any proposed activities or management actions are appropriate for the physical
550 characteristics of the site.

551 **4.5.2 Management Actions**

- 552 ● Any permanent or semi-permanent improvements should carefully consider the disturbance to the
553 site and the capacity of the site to support the use.
- 554 ● Minimize disturbance to the site to protect soil and vegetation.
- 555 ● Slope steepness affects erosion and access for management. Topography should be an important
556 consideration for forest management and recreational uses (i.e., trails).

557 **5. Cultural History**

558 **5.1 Indigenous History**

559 Richmond is located within Ndakinna (in-DAH-kee-NAH), the homeland of the Western Abenaki people,
560 also known as the Original People, who have a unique connection to this land and have been its
561 traditional caretakers since at least the last Ice Age. For hundreds of generations before the European
562 colonists arrived and applied their own borders and labels, the Western Abenaki people lived and worked
563 on this land, stewarding resources in an ecologically sustainable way. Given that ACF lies along
564 important east-west and north-south transportation and trade routes, other tribes are likely to have visited
565 the forest as well.

566 Abenaki oral tradition and written accounts, historical resources, and archaeological studies of prehistoric
567 sites in Richmond inform our understanding of how the ACF landscape has been stewarded and its
568 continued importance to Indigenous people of our town and region. General resources include books such
569 as those by Wiseman (1995, 2001), an Abenaki elder and scholar, and Haviland and Power (1994), as
570 well as numerous online resources. Appendix 3 in Wiseman (2001) lists many written, video, and
571 museum resources regarding Abenaki cultural history.

572 Specifically for the Richmond area, archaeological studies in the 1990s near the bridges in Jonesville over
573 the Huntington and Winooski rivers have yielded valuable physical evidence of occupation and forest use
574 by Indigenous peoples before colonization (Thomas et al. 1995; Doherty et al. 1996). These sites were
575 radiocarbon dated to approximately 1040 AD (near Winooski bridge) and 1500 AD (near Huntington
576 bridge), and thus considered to represent the Middle to Late Woodland period. The sites show that
577 animals “including black bear, deer, beaver, porcupine, muskrat, fisher, mink, skunk, cottontail, red
578 squirrel, and chipmunks were taken for both meat and pelts. Various nuts, including butternut, hickory
579 nuts, beech nuts, and acorns from red oak” were also collected and processed for consumption and storage
580 (Thomas et al. 1995). Diverse tree species were used for firewood at the Huntington River site, including
581 beech, maple, birch, red pine, eastern hemlock, elm, eastern hophornbeam, eastern cottonwood, red pine,
582 and possibly alder. No evidence of maize was found at these sites, even as maize, beans, and other plants
583 were being cultivated at that time along the Winooski River closer to Lake Champlain. Thomas (2008)
584 surmises that these Jonesville sites were seasonal encampments occupied between September and late
585 December/early January to collect and process forest resources. Such findings suggest that the forests
586 where ACF is now located were largely stewarded and used for hunting and gathering, rather than
587 agriculture. This pattern concurs with broader geographical accounts of Abenaki practices, such as
588 Wiseman (2001:27), who stated that the Abenaki “... had smaller seasonal camps along most rivers eight
589 thousand winters ago” and described gathering and hunting activities in the uplands.

590 The Jonesville archeological digs also uncovered the dramatic environmental changes that occurred as a
591 result of forest clearing by European settlers (Thomas et al. 1995). The alluvial terrace on the Huntington
592 River, which the Abenaki families occupied over 500 years ago, had developed slowly over thousands of
593 years with minimal flooding evident in the analysis of sediments. In contrast, during the 19th and early
594 20th centuries, catastrophic flash flooding became more common as upland and riparian forests were
595 cleared for farming. Thomas (2007:9) noted that “between roughly 1810 and 1880, four to seven feet of
596 sand, gravel, and even small cobbles were deposited on the terrace surface.” These extraordinary floods
597 covered or destroyed most evidence of precontact use and settlements. More recently, as abandoned
598 farmland grew back to forest, flooding has declined. “Since the early decades of the twentieth century,
599 less than eight inches of alluvium have been deposited on the terrace surface next to the Huntington
600 bridge, and most of this was probably due to the great flood of 1927” (Thomas 2007:10).

601 5.1.1. Plants and Animals of Special Cultural Importance for Western Abenaki

602 A number of forest species were and continue to be of special cultural importance to the Abenaki people,
603 and as such deserve special management consideration. Among tree species, these include black ash
604 (*Fraxinus nigra*, also called brown ash and *maalakws* in Abenaki) used for basketry, and white birch
605 (*Betula papyrifera*, also called canoe birch, its bark called *wigwa* in Abenaki) for canoes, homes, and
606 containers. Unfortunately, black ash populations are currently highly threatened by the emerald ash borer,
607 which is already present in Richmond. Butternut (*Juglans cinerea*, in Abenaki *pagon* or *bagon*) were
608 among the trees highly valued for food, medicines, materials, and dyes (Haviland and Power 1994;
609 Wiseman 1995b, 2001). This culturally important species is also threatened. The butternut canker fungus,
610 first found in Vermont in 1983, now infects early all butternut trees causing dieback and often death.
611 Maple sugaring (*Pkwamhadin* – “gathering of maple sap” (Chenevert 2021)) was an important seasonal
612 activity among the Western Abenaki, one which was taught to colonists (Cotnoir n.d.).

613 Thomas (et al. 1995:61-64) lists the uses by the Abenaki of some thirty species of trees and shrubs
614 abundant in the mixed deciduous forests of Vermont, many of which are found in ACF. Wiseman (1995a,
615 1995b, 2001) describes a wide range of forest plant species that were and are collected for construction

616 materials, food, medicines, and dyes by Abenaki people. In Appendix 2, Wiseman (2001) lists many
617 forest plants used in Abenaki herbal medicines by the maladies that they treat. A complete list of
618 culturally important species found now or in the past at ACF would be valuable to develop for use by the
619 ACFC in management decisions and educational materials. Ideally, such a list would be compiled, and
620 important species prioritized, in partnership with the Abenaki people.

621 Before colonization, the Abenaki likely hunted and trapped a wide range of animal species for food and
622 pelts in the forested landscape where ACF is now located. Thomas et al. (1995:65-75) describes the
623 traditional uses of the 11 species of animals found at the Huntington River site. Wiseman (2001)
624 describes the relationship and importance of many species to the Abenaki, as well as how they were
625 traditionally hunted and used. The acts of hunting and fishing, as well as the resulting food, skins and
626 other usable body parts (e.g., bones and sinew), remain culturally important for many Indigenous peoples.
627 As mentioned for forest flora above, it would be valuable to develop a prioritized list of ACF's animal
628 species of cultural importance in consultation with Abenaki partners, including uses, stewardship, and
629 both Abenaki and scientific names.

630 5.1.2. Abenaki language and the ACF

631 The Western Abenaki language, which is in the Algonquian family of languages, is considered critically
632 endangered by UNESCO (2010). It is a descriptive language based on root words specifying physical
633 qualities. For example, the region's largest river is named Winoskisibo – built from *Winos* means onion,
634 *ki* means land, and *sibo* means river. Thus the Winooski River is named for the ramps and other wild
635 onions which were known to grow in abundance along its shores. Maintaining the Abenaki language and
636 culture is deeply connected to the Abenaki homeland and its stewardship. For example, Cotnoir (n.d.), a
637 citizen of the Nulhegan Band of the Coosuk Abenaki Nation, wrote that "...sugaring still functions as a
638 time for our community members to gather and connect with the woods and one another. Through
639 sugaring, we continue to cultivate a working relationship with the land, while practicing our language –
640 Western Abenaki."

641 Conservation efforts, such as the ACF, can inadvertently contribute to the erasure of Indigenous presence
642 when introducing and perpetuating nonnative place names and management practices. Conversely, the
643 ACF can support the revival of the Western Abenaki language and culture by supporting the use of
644 Abenaki language for places, practices, flora, and fauna in the naming of trails, educational materials, and
645 signage. Appendix D includes suggestions developed by the Richmond Racial Equity committee in
646 collaboration with Abenaki tribal citizens and culture keepers. If ACFC decides to go beyond that list,
647 Abenaki culture keepers should be consulted.

648 5.2 Colonial History

649 Since European settlers have arrived, the Andrews Community Forest property has had a rich history -
650 over 200 years of agriculture and forest management. "Gray Rocks Farm," as it was formerly known, was
651 placed on the National Register of Historic Places in 1996 "because of its dual architectural and
652 agricultural significance" (Longstreth 2007). The farm exemplifies the growth and development of dairy
653 farming in 19th and 20th century Vermont. The land that is now the Community Forest was largely the
654 farm's pasture and woodlot, and most of the farmland and remains of the historic farm's agricultural
655 buildings are on land now owned by Maple Wind Farm and protected by an agricultural conservation
656 easement The farm house and immediate yard are privately owned.

657

658 The existing forest parcel, along with 212 additional acres, was first farmed by James Butler, beginning
659 around 1800. He constructed a farmhouse, blacksmith shop, and an English barn before selling the
660 property to Asa Rhodes in 1813. The property remained in the Rhodes family for over a hundred years,
661 passing from father to son.

662
663 The 1850 agricultural census indicates that the Rhodes farm was primarily a dairy farm, with 45 cows
664 producing 1,800 lbs. of butter and 15,000 lbs. of cheese annually. As was common in Richmond at the
665 time, the farm also had other livestock – horses, chickens, sheep, and swine. The Rhodes also harvested
666 125 tons of hay and 200 lbs. of maple syrup annually and grew many different crops: corn, oats, rye,
667 potatoes, peas, and beans.

668
669 Over the years, ownership passed first to Asa’s son, Cornelius, and then to his son Edward, around the
670 turn of the century. The farm continued to grow and ultimately thrived as the market for butter and cheese
671 expanded. Given the farm’s success, in 1917, Edward reconstructed the English barn into a large U-
672 shaped barn that more than doubled the space available for the cows. The new barn also added space for
673 horses, a granary, and a milk house and he added a silo for storing cereals elsewhere on the property.

674
675 In 1923, Edward Rhodes sold the farm to Clarence Andrews. Andrews continued dairying operations on
676 the property until 1978. The Andrews also operated a successful inn, the Gray Rocks Inn, from 1928 to
677 1941. Ina Andrews, Clarence’s wife, ran the inn, cooking three meals a day for guests from
678 Massachusetts, New York, and Connecticut. During this period, the Richmond area was full of small inns
679 for travelers looking to experience the idyllic countryside. The tourism business was vital to the
680 Richmond economy and an important period in the town’s history.

681
682 The Andrews family also kept a small deer camp, known as “Odds and Ends,” on the northern portion of
683 the property. They built a rustic cabin there in the 1950s but stopped using it in the 1990s and eventually
684 had it burned in 2013. Only the metal roof and two 1950s automobiles remain on the property.

685
686 Angus Cummings (2019), a UVM student, interviewed several of the Andrews sisters and other
687 townspeople familiar with the recent history of the parcel in 2018. A link to his thesis and historical
688 photos of the site contributed by the Andrews family can be found on the ACF website.

689 **5.3 Remaining Historical Sites and Features**

690 Today, all that is left of the many farmstead buildings on the community forest parcel is two former
691 farmstead sites with stone foundations. One foundation is on the northwestern side of the property, near
692 the VAST trail. The other remaining foundations are near the end of the eastern farm road. One remaining
693 foundation, set slightly apart, was either a springhouse or a small barn. The adjacent parcel to the east,
694 was also part of Gray Rocks Farm and the Andrews Farmstead. The 1813 farmhouse and barn remain
695 there, just outside of the town-owned forest property. In 2013 Maple Wind Farm bought 189 acres from
696 the Andrews family largely below Route 2, which is conserved by an agricultural use easement On
697 January 13th, 2014 the barn located across the street from the ACF entrance, burned down from an
698 electrical fire. Maple Wind Farm rebuilt the barn in the same location in 2014, and they operate a farm
699 selling grass-fed beef, pasture-raised, non-GMO pork, chicken, turkey and eggs.

700 **5.4 Potential partners regarding ACFC cultural history**

- 701
- Abenaki Nation of Missisquoi, <https://www.abenakination.com/>

- 702 ● The Nulhegan Band of the Coosuk Abenaki Nation, <https://abenakitribe.org/>
- 703 ● Kerry Wood and Annette Urbschat for consultation regarding the Western Abenaki language
- 704 ● Abenaki Arts and Education Center, <https://abenaki-edu.org/>
- 705 ● Radiate Art, <https://www.radiateartspace.org/>, Contact: Rebecca Rouille
- 706 ● Richmond Racial Equity, Contacts: Scott Silverstein and Alexis Latham
- 707 ● Chittenden County Forester, Ethan Tapper

708 **5.5 Management Objectives**

- 709 ● Educate forest visitors of all ages about the Indigenous and colonial cultural history of the forest
- 710 and its context within Richmond.
- 711 ● Protect remaining cultural features and values.
- 712 ● Maintain viable populations of plants and wildlife of cultural importance.
- 713 ● Include Indigenous perspectives, knowledge, and language in ACF educational materials,
- 714 management and naming practices.
- 715 ● Continue to expand and enhance the cultural information known about the forest.

716 **5.6 Management Actions**

717 The following actions are recommended to protect and highlight cultural features in the forest:

- 718 ● Establish a good working relationship with the Western Abenaki People. Make a concerted effort
- 719 to welcome them to this land and to contribute to our community's understanding of the cultural
- 720 importance of ACF to Indigenous people.
- 721 ● Add interpretive signage about the cultural history of this forest land, especially at historic sites.
- 722 ● Place buffers on main trails located near cultural resources; consider access to cultural resources
- 723 via spur trails.
- 724 ● Coordinate with Chittenden County forester Ethan Tapper and Abenaki tribal forester(s)
- 725 regarding the best management of black ash given its cultural importance and the existential
- 726 threat of the emerald ash borer. In addition, explore with them the best approach to managing any
- 727 butternut trees that may be found in the ACF and any other culturally important species that may
- 728 be threatened.
- 729 ● Partner with Abenaki tribal representatives and other interested parties (e.g., schools, Eagle
- 730 Scouts, college students) to develop and prioritize lists of culturally important forest plant, animal
- 731 and fungal species to help the ACFC manage them sustainably and provide educational materials.
- 732 Such lists should include Abenaki names, scientific names, traditional and current uses,
- 733 traditional ecological knowledge and stewardship practices, potential threats, and other
- 734 information, stories or sources that would help in their sustainable management.
- 735 ● Implement naming practices, signage, interpretive materials and activities that reintroduce the
- 736 Abenaki language and keep it alive on the landscape.
 - 737 ○ Choose AFC trail names from the list of Abenaki words for animals of the forest and
 - 738 landscape features found in Appendix D Part 4. These words were proposed and vetted
 - 739 by Abenaki tribal citizens and culture keepers.).
 - 740 ○ Develop and deploy interpretive signage and other educational materials that explain and
 - 741 celebrate Abenaki language, forest uses and stewardship practices.
 - 742 ○ Connect with Radiate Art, which has agreed to share high quality images of their murals
 - 743 for use by the ACF interpretive materials and signage.
 - 744 ○ Encourage ACF involvement in partnerships to generate educational materials and
 - 745 programming for the UN International Decade of Indigenous Languages 2022 – 2032.

- 746 See: [https://www.un.org/development/desa/indigenouspeoples/indigenous-](https://www.un.org/development/desa/indigenouspeoples/indigenous-languages.html)
 747 [languages.html](https://www.un.org/development/desa/indigenouspeoples/indigenous-languages.html)
 748 ● Consider connecting with the Abenaki Trails Project, exploring the potential for ACF to be an
 749 educational site for that effort. See: <https://abenakitribe.org/abenaki-trails-project>
 750 ● Place buffers on main trails located near cultural resources; consider access to cultural resources
 751 via spur trails.
 752 ● Work with the Abenaki tribes, the Andrews family, and others with cultural knowledge of the
 753 forest to host programs and tours about the history and contemporary resources of the ACF.
 754 ● Consult with an Abenaki Forester or tribal affiliate upon any management plan revisions and
 755 major management activities that may affect cultural resources. (See Appendix D, Part 3).

6. Upland Natural Communities

6.1 Natural Communities in the Forest

757 Natural Communities are our way of categorizing different vegetation patterns across the landscape. In
 758 areas with similar climate, precipitation, soils, geology, and topography, reoccurring assemblages of
 759 plants dominate. These categories of vegetation are called natural communities and have been described
 760 in the book: *Wetland, Woodland, Wildland: A Guide to the Natural Communities of Vermont* (Thompson
 761 & Sorenson, 2000). These natural communities include familiar types such as Northern Hardwood
 762 Forests, Hemlock-Northern Hardwood, Dry Red Oak-White Pine, and Red Pine Forests.

763 Each natural community type is ranked based on its relative rarity on a S1 – S5 scale. Communities with a
 764 S1-rank are those types that are extremely rare in the state, such as Alpine Meadows and Pitch Pine
 765 Woodland Bogs. S5-ranked communities are common and widespread in the state and include such
 766 familiar types as the Northern Hardwood Forests and Alder Swamps. Each occurrence of a natural
 767 community is also ranked based on its quality. “Significant” natural communities are those sites that meet
 768 the combination of rarity, size, and quality to represent the best occurrences of their community type in
 769 the state.

770 Natural communities are important because they form the basis for the natural world that we use and
 771 interact with regularly. They provide the habitat for all the wildlife that we encounter as well as for
 772 myriad rare species. Conserving natural communities is often considered a good “coarse filter” approach
 773 for conserving biodiversity in general. Natural communities act as habitat for most of the common and
 774 rare species of plants and wildlife.

775 The Conservation Easement protecting the Andrews Community Forest describes several areas of the
 776 property that are uncommon or particularly sensitive, and therefore require special treatment. Natural
 777 communities that are uncommon or rare in Vermont will be managed in a more sensitive manner to allow
 778 the natural communities that contribute to statewide biodiversity to persist into the future.

6.2 Upland Natural Community Types on the Andrews Community Forest

Natural Community	State Rank	Number of Occurrences	Total Acreage
-------------------	------------	-----------------------	---------------

Dry Oak Forest/ Dry Red Oak-White Pine Forest	S3	6	16
Red Pine Forest or Woodland	S2	1	2
Hemlock-Northern Hardwood Forest	S5	1	313
Hemlock Forest	S4	3	18
White Pine-Northern Hardwood Forest	S4	5	314
Mesic Red Oak-Northern Hardwood Forest	S4	5	385

784

785 The Ecological Report (Diamond, 2017) provides a good overview of the natural communities present on
 786 the Andrews Community Forest. The table above illustrates a breakdown of the upland natural
 787 communities present in the forest and their size and abundance. As can be seen from this table, three
 788 communities comprise most of the forest: Mesic Red Oak-Northern Hardwood Forest, White Pine-
 789 Northern Hardwood Forest and Hemlock-Northern Hardwood Forest. The White Pine-Northern
 790 Hardwood Forest occupies much of the southern portion of the forest and is indicative of areas formerly
 791 in pasture or other agricultural production. In the northern part of the forest, roughly north of the VELCO
 792 transmission line, the forest is more dominated by red oak and northern hardwoods. These large, matrix
 793 forming communities extend well beyond the community forest borders and comprise a portion of the
 794 large forest block to the north and east.

795

796 Management recommendations for upland communities that are considered significant depend largely on
 797 the type of forest, how rare the community is, and how large of an area it typically occupies on the
 798 landscape. Occurrences of large, common, communities such as Northern Hardwood Forests and
 799 Hemlock-Northern Hardwood Forests are much more resilient to small perturbations than rarer
 800 communities that occur in small patches.

801

802 The Dry Oak Forest communities present in the northern part of the parcel, though smaller, are excellent
 803 examples of an uncommon community type and may be state significant communities. These
 804 communities are restricted to the droughty ridges and summits with southern exposure. These sites
 805 typically have shallow soils, frequent bedrock outcrops and are more susceptible to disturbance. This,
 806 coupled with the fact that they are typically small sites, means that any development or perturbations in
 807 part of the community could have a detrimental effect on the entire stand. Clearing of land for recreational
 808 activities should be avoided in these areas.

809

810 The Dry Oak natural communities, as they are currently mapped, are protected under the property's
811 Conservation Easement. However, due to recent timber harvesting, some areas of significant natural
812 communities, or with the potential to exhibit traits of these natural communities, were altered. Should
813 areas of these natural community types become evident in the recently harvested area, they should be
814 protected with equal measure to those defined in the Conservation Easement. If the extent of these
815 communities is expanded at a later date, Town Committee members should communicate these updates to
816 the Vermont Land Trust stewardship staff.

817 **6.3 Management Objectives**

- 818 ● Protect Dry Oak Forest, Dry Red-Oak White Pine Forest, Dry Oak-Hickory-Hophornbeam
819 Forest, Red Pine Forest, and other significant natural communities as well as the ecological
820 processes that sustain them.
- 821 ● Retain soil integrity, water quality, natural species composition, natural disturbance regimes and
822 natural hydrology.

823 **6.4 Management Actions**

- 824 ● Implement Forest Management Plan, adopted by the Vermont Land Trust, ACFC, and the Select
825 Board in November 2019.
- 826 ● Update natural community mapping as more on-the-ground data becomes available; communicate
827 this information forward to the Vermont Land Trust.
- 828 ● Within the Ecological Protection Zones, which represent state-significant natural communities,
829 the following Conservation Easement limitations apply (paraphrased):
 - 830 ○ All activities shall incorporate steps to retain soil integrity, water quality, natural species
831 composition, natural disturbance regimes, and natural hydrology;
 - 832 ○ All forest management activities are prohibited without the Vermont Land Trust's prior
833 written approval;
 - 834 ○ New roads or trails are prohibited without the Vermont Land Trust's prior written
835 approval.
- 836 ● Identify and control exotic species in conjunction with the 2019 Forest Management Plan.

837 **7. Water Resources**

838 The Andrews Community Forest is located within the Winooski watershed. Water from forests and fields
839 runs off into the Winooski River, which flows into Lake Champlain. Surface waters on the property
840 include an inactive beaver pond and wetlands, three headwater streams, and two confirmed vernal pools.
841 Maintaining forested riparian cover adjacent to these resources is vital for the protection of water quality
842 and conservation of important aquatic habitat.

843 **7.1 Streams and Riparian Buffers**

844 Several perennial streams arise on and meander through the property on their way to the Winooski River.
845 A stream is the full length and width, including the bed and banks, of any watercourse. A stream has a
846 channel that periodically or continuously contains moving water, has a defined bed, and has banks that
847 serve to confine water at low or moderate flows. Streams include not only perennial but also intermittent
848 streams that do not have surface water flow throughout the year and/or throughout the defined channel.
849 Riparian buffers are the width of land adjacent to the watercourse between the top of the bank and the

850 edge of other land uses. Riparian buffers are typically undisturbed areas consisting of trees, shrubs,
851 ground cover plants, duff layer, and an uneven ground surface.

852

853 Forested streamside riparian habitats offer a suite of ecological benefits. Forested riparian buffers anchor
854 the stream shoreline and limit streambank erosion, preventing wetland and water-quality degradation.
855 They offer important plant and animal habitat by providing shade and coarse woody debris which provide
856 structural and substrate diversity. They also provide organic matter and nutrients that fuel stream food
857 chains.

858 7.1.2 Management Objectives

- 859 ● Maintain and preserve surface and groundwater quality.
- 860 ● Provide food and cover for aquatic and terrestrial species as well as structural habitat diversity
861 within the stream channel with leaf litter and woody debris.
- 862 ● Protect channel stability by preventing excessive scour and erosion of streambanks.
- 863 ● Preserve wildlife travel corridors.
- 864 ● Buffer aquatic plants and animals from disturbance.

865 7.1.3 Management Actions

- 866 ● Protect soil integrity and minimize erosion.
- 867 ● Protect natural water levels and flows.
- 868 ● Forestry and agricultural uses of the property shall, at a minimum, comply with the terms of the
869 Conservation Easement and with state and local water-quality regulations.
- 870 ● Stream Crossings: Stream crossings can have a significant impact on the movement and
871 distribution of aquatic species. The goal of a stream crossing is to accommodate wildlife and
872 aquatic organism movement and to minimize habitat fragmentation. Stream crossings should be
873 designed to maintain the course, the current, and the cross-section of the natural stream channel
874 and maintain existing in-stream conditions. Stream crossings should be strategically located to
875 minimize the number needed and to minimize the impacts to the watercourse. Crossings should
876 be constructed perpendicular to the channel and to span the width of the channel.

877

878 Bridges are generally recommended for stream crossings in community forest environments.
879 Culverts often cause changes to channel alignment, channel diversity, and hydraulic conditions,
880 which may degrade habitats above and below the structure. An undersized stream crossing can
881 lead to bank erosion or failure of the structure. Culverts can be designed to maintain natural
882 stream substrates within the structure and minimize disruption to the channel and riparian
883 corridors. Timing of construction, erosion and sediment control planning, and post-construction
884 revegetation are all critical components of a successfully constructed stream crossing.

- 885 ● Riparian Buffer Zone: Maintain 50 foot Riparian Buffer Zone (RBZ) on all perennial streams as
886 required by the Conservation Easement. Any management or use of the RBZ must be conducted
887 in a manner designed to protect soil integrity and minimize erosion, and must incorporate up-to-
888 date ecological knowledge and management practices. Any forest management activities or new
889 stream crossings within the RBZ require approval of the easement steward (Vermont Land Trust).
890 Agriculture is not permitted within the RBZ.

- 891 ○ Within these buffers, no cutting of trees or operation of logging equipment should occur,
892 except what is necessary to cross streams (as described above) and where existing forest

- 893 management roads are stable, located within this buffer, and no reasonable alternative
894 trail exists.
- 895 ○ Trail networks should be designed to avoid parallel alignment within a riparian buffer.

896 **7.2 Wetland Natural Communities**

897 The Andrews Community Forest sits well above the Winooski River lowlands, occupying the south
898 facing slopes of the Green Mountain foothills. This is primarily a landscape of upland communities, with
899 wetlands being confined to the few low areas, narrow benches and areas of groundwater discharge.
900 Overall, the total acreage of wetlands is relatively small, but their rarity makes them that much more
901 important.

902

903 Three wetland types have been identified within the Andrews Community Forest, as summarized in the
904 table below. Two of the Shallow Emergent Marshes are on the southern border of the community forest
905 and continue off-property. All three are beaver-influenced wetlands and contain a diverse mixture of open
906 water, herbaceous vegetation, and occasional shrubs. The northern marsh sits in a scenic low area
907 surrounded by upland forests. These marshes are significant for a wide range of functions and values
908 including water quality, erosion control, and floodwater attenuation. Being part of a public, conserved
909 parcel, they also offer opportunities for education and research. Perhaps the most important function that
910 they serve is that of wildlife habitat. The mosaic of open water and herbaceous vegetation in a forested
911 matrix is ideal for a wide variety of song birds, raptors, mammals, reptiles, and amphibians.

912

913 Seeps are small wet areas that are the sites of groundwater discharge which often form the headwaters of
914 small streams. Because this groundwater can flow throughout the winter, they are often the first areas in
915 the spring to harbor green vegetation, making them important for wildlife, including bears. Certain
916 amphibians, such as the spring and two-lined salamanders, also rely on these wetlands. Providing a cold,
917 clean source of water for downstream surface waters also makes them important for water quality.

918

919 Because these wetlands are small, it is difficult to map them remotely. It is likely that more seeps are
920 present on the Andrews Community Forest that remain unmapped.

921 **7.2.1 Wetland Types on the Andrews Community Forest**

Natural Community	State Rank	Number of Occurrences	Total Acreage
Seep	S4	3	0.62
Shallow Emergent Marsh	S4	3	5.73
Vernal Pool	S3	2*	0.08

922 * More vernal pools may exist

923 7.2.2 Management Objectives

- 924 ● Protect and conserve significant wetland resources.
- 925 ● Prevent wetland and water quality degradation.
- 926 ● Protect important plant and animal habitat.
- 927 ● Protect significant wetland functions and values.

928 7.2.3 Management Actions

- 929 ● Identify and map wetland resources within the community forest.
- 930 ● Avoid construction of recreational trails through wetlands.
- 931 ● Utilize boardwalks and bridges for any necessary wetland crossings.
- 932 ● Provide wetlands with naturally vegetated buffers.
- 933 ● Identify areas where invasive species are having a significant negative impact on wetlands and
- 934 develop/implement an invasive species management strategy.

935 **7.3 Vernal Pools**

936 Vernal pools are seasonally flooded forested wetlands that hold water in the spring and typically dry out
937 by late summer. They typically have six characteristics: 1) they occur in a forested matrix (though there
938 are exceptions to this); 2) they have a seasonal hydrology; 3) they are isolated from surface waters; 4)
939 they are small; 5) they lack fish, and 6) they have vernal pool indicator species present. Vernal pool
940 indicator species are those species that are dependent on these habitats.

941
942 Vernal pools provide critical habitat for a wide variety of amphibians and invertebrates, including
943 indicator species such as wood frogs, spotted salamanders, blue-spotted salamanders, Jefferson
944 salamanders, fairy shrimp, and fingernail clams. Unlike other amphibians in the region, the eggs of these
945 indicator species do not have any defenses against predation by fish; they are therefore reliant on the
946 fishless aquatic habitat of vernal pools.

947
948 Like the seepage wetlands described above, vernal pools are also small wetlands that are difficult to
949 remotely map. Two vernal pools have been field-confirmed and described in the Baseline Documentation
950 Report (Diamond, 2017) while two others still await field confirmation.

951
952 Both of the field-confirmed pools were assessed by Diamond (2017) and are examples of vernal pools.
953 Each contained many hundreds of eggs of wood frogs and spotted salamanders and appeared to be a
954 stable breeding habitat for these (and many other) species. The surrounding forests are in moderately
955 good condition, though the northern pool has some recent timber harvesting in the vicinity. Overall, the
956 upland landscape surrounding these pools provides valuable year-round habitat for these pool-breeding
957 amphibians. To maintain this habitat, certain management guidelines are recommended.

958
959 Vernal pools are further protected under the Conservation Easement by Vernal Pool Ecological Protection
960 Zones (EPZ), which include a 100' undisturbed buffer, and a 500 foot secondary protection zone where
961 timber harvesting is allowed, but must have the goal of protecting and enhancing amphibian habitat, and
962 must be addressed in the Forest Management Plan.

963 7.3.1 Management Objectives

- 964 ● Provide and maintain high quality amphibian habitat.

- 965 ● Promote and maintain high levels of shade and coarse woody debris.
966 ● Per the Conservation Easement, clearly identify management practices within the EPZ zones in
967 the Forestry Plan.

968 7.3.2 Management Actions

- 969 ● Avoid any disturbance or impact to the actual vernal pools.
970 ● Maintain an undeveloped and undisturbed 100' primary ecological protection zone and a 500'
971 secondary ecological protection zone around the vernal pools, as described in the Conservation
972 Easement. Pedestrian trails are compatible in the primary EPZ but must be approved by Vermont
973 Land Trust.
974 ● Avoid creating ruts or pools of standing water as the result of recreational trails in the primary
975 EPZ.
976 ● Follow harvest prescriptions in the EPZ zones as identified in the Forestry Plan.
977 ● Identify areas where invasive species are having a significant negative impact on vernal pools and
978 develop/implement an invasive species management strategy for both the vernal pool and the
979 surrounding buffer zone.

980 **8. Forestry**

981 **8.1 Forestry Activities**

982 Forest management, in the form of periodic harvesting of timber, is an important part of land
983 conservation, maintaining the working landscape, and supporting the forest products economy in
984 Vermont. The forest products industry, in addition to being economically important in Vermont, supports
985 the maintenance of healthy, intact ecosystems by providing the means for enhancing wildlife habitat,
986 elevating the health and resilience of forested ecosystems, and generating periodic income to fund
987 important stewardship activities. It is also a source of local, renewable resources in the form of forest
988 products. Forests, such as ACF, can sustain plant and wildlife species of special cultural importance to
989 Abenaki peoples. Forest management for timber on municipal lands can serve as a demonstration of
990 responsible and sustainable forest management, educating residents of Richmond and beyond in how to
991 harvest forest resources in a sustainable way. If forest management incorporates traditional practices by
992 engaging Abenaki foresters and culture keepers, it offers the opportunity to educate the community about
993 historical and contemporary Indigenous forest stewardship practices.

994
995 In the course of a normal timber harvest, choices of which trees to retain and which to harvest are guided
996 by a combination of ecological principles (which tree is "healthier," which trees are in use, or may be
997 used, by wildlife), human desires (what the management objectives are for a property) and economic
998 ideas (which tree is a more valuable species or may produce a more valuable product in the future).
999 Through harvesting, the growth potential of the forest is concentrated on the specific trees that exhibit
1000 some combination of these values in order to grow these individuals more efficiently, or redirected from
1001 trees that have maxed-out their potential value to new regeneration or existing immature trees. The forest
1002 is fully capable of executing this selective process on its own through competition and natural mortality
1003 events, but it will not necessarily do so in a way that supports the goals, objectives, and values of the
1004 Andrews Community Forest and Richmond community, nor will it do so while producing a range of
1005 local, renewable resources and economic benefits.

1006

1007 As alluded to above, the harvesting of timber, while utilizing means which are not entirely equivalent to
1008 natural processes, positively interacts with a number of broad environmental concerns. Forest products
1009 are a renewable resource which can be sustainably extracted while preserving or enhancing wildlife
1010 habitat, forest ecology, and other ecological benefits. Timber harvests provide fuel for heat and electricity,
1011 fiber for paper products, and timber for building materials. Harvesting timber also provides periodic
1012 income to forest landowners, helping lower development and subdivision pressure on forested lands.
1013 Finally, timber sale proceeds can allow landowners to engage in non-lucrative stewardship activities,
1014 including ecosystem restoration and wildlife habitat enhancement.

1015
1016 The ability of a forest to respond to and maintain its health during disturbance is known as resiliency.
1017 Research has shown that forests, in addition to being composed of myriad independent species, have
1018 evolved as systems in many ways. Diverse forests efficiently respond to disturbance, stabilizing nutrients
1019 and soil and create conditions suitable to the growth of subsequent generations of healthy trees. While
1020 forests today encounter regular natural disturbance events, the largest sources of disturbance are, and will
1021 be into the indefinite future, human-related. In the face of an unstable climate, invasive exotic plants,
1022 animals and pathogens, and many other unpredictable problems, it is prudent to manage forests for
1023 resiliency in the course of any long-term forest management planning. Practically this means managing to
1024 encourage diversity, specifically species and structural diversity, at all times. For all the reasons listed
1025 above, the encouragement of all types of diversity should be paramount in the management of the
1026 Andrews Community Forest.

1027
1028 From a forest management perspective, encouraging a diversity of different age classes of trees provides
1029 the greatest opportunity for the periodic timber harvesting from a given area. For example, a forest with a
1030 single age class of trees may usually only be harvested all at once, with a long time period between
1031 harvests. Forests with a diversity of age classes can provide landowners with income and forest products
1032 more frequently, as different age classes periodically mature and require treatment at different times.
1033 From an ecological perspective, research has shown that many relatively undisturbed forests consist of
1034 trees of several age classes. Encouraging a variety of different age classes and habitat conditions more
1035 closely mimics disturbance regimes in an unmanaged forest, allowing us to harness the forest's natural
1036 regenerative capacity to keep itself healthy, vibrant, and productive. Managing using “uneven-aged
1037 silviculture” also allows us to minimize the scale of our disturbances to forest ecosystems at any one time.

1038 **8.2 Forest Management Plan**

1039 On 11/18/2019 The Selectboard Adopted a Forestry Management Plan written by Ethan Tapper. The
1040 document details how the forest will be managed for its timber and other natural resources. The document
1041 covers topics such as diversity and resiliency of species, connectivity of the forest block, invasive species
1042 control, wildlife habitat, water management, soil assessments, carbon sequestration and storage,
1043 recreation, cultural features, and boundaries. It discusses active forest stewardship practices, addresses
1044 Emerald Ash Borer and other invasive management techniques that should be used within the ACF.
1045 Most importantly, the forest has been broken into three zones that each have a different management
1046 approach. Zone 1 (148 acres, 36% of ACF) located in the lower sections of the forest allows for the most
1047 intensive forestry and forest management activity to occur. Patch cuts of up to five acres can occur in
1048 stands 1 and 2 in zone 1. Zone 2 (145 acres, 35% of ACF) is located in the Eastern half of the property
1049 and includes stands 3-6. Mixed age stands are encouraged and no openings greater than one acre can
1050 occur. Management objectives prohibit whole tree harvesting techniques and the intent is to “enhance
1051 structural and species diversity and to encourage the development of late successional characteristics in

1052 the forest” (FMP, Tapper, p. 6). Zone 3, 117 acres (28% of the forest), located in both Eastern and
1053 Western sections, is a “reserve zone” also called “ecological protection zones” (EPZ’s), with management
1054 only for monitoring and controlling invasive and exotic plants. These areas are distributed throughout the
1055 forest.
1056 This Forest Management Plan provides an initial schedule for maintenance and on-going forest
1057 management activities by stand and zone. All forestry activities should be in agreement with this
1058 document. (Located on the town website; click [here](#) for direct access).

1059 **8.3 Management Objectives**

- 1060 ● Follow the Forest Management Plan Adopted on 11/18/2019
- 1061 ● Maintain a healthy and productive forest.
- 1062 ● Maintain and encourage a diversity of native species, of all taxa.
- 1063 ● Maintain and encourage a structurally complex forest.
- 1064 ● Protect sensitive natural resources, including water resources, significant natural communities,
1065 and rare, threatened, and endangered species.
- 1066 ● Identify areas where invasive species are having a significant negative impact and
1067 develop/implement an invasive species management strategy.
- 1068 ● Use timber harvesting in the Andrews Community Forest for educational and demonstrational
1069 purposes, demonstrating sustainable timber harvesting to residents of Richmond and beyond.
- 1070 ● Enhance wildlife habitat whenever possible.
- 1071 ● Enhance species of cultural importance, especially to the Abenaki peoples.
- 1072 ● Preserve the cultural and historic importance of the responsible stewardship of forested land on a
1073 property with a long, rich history of which forest management has been a part for millennia.
- 1074 ● Conduct all management activities in accordance with Vermont’s Acceptable Management
1075 Practices to prevent soil erosion and protect water quality.
- 1076 ● Manage forest stands for long rotations, including retaining biological legacy trees and areas of
1077 trees indefinitely.
- 1078 ● In cooperation with Abenaki nations, incorporate traditional ecological knowledge in
1079 management of trees and understory plants and wildlife habitat.

1080 **8.4 Management Actions**

- 1081 ● The Forest Management Plan was created by Chittenden County Forester, Ethan Tapper, in
1082 conjunction with the Vermont Land Trust and was adopted by the Selectboard in November of
1083 2019.
- 1084 ● Hold educational events around forest management activities to inform the public about the
1085 rationale and best practices of sustainable forest management.
- 1086 ● Reach out to Abenaki tribal foresters to contribute to future forest management planning and
1087 activities.
- 1088 ● In collaboration with Abenaki partners, identify culturally important species (e.g., black ash) and
1089 the stewardship practices needed to sustain them, to inform future forest management activities.

1090 **9. Wildlife Habitat**

1091 In response to a survey about whether the Town of Richmond should purchase the Andrews Forestland as
1092 a community forest, wildlife habitat protection was the most often listed interest of respondents related to
1093 the opportunity. Significant information regarding wildlife habitat exists through work completed in the

1094 Chittenden County Uplands Conservation Project. Habitat has been a focus for wildlife study and presents
1095 an opportunity for continued study about wildlife use within the forest, given the block's area and through
1096 statewide priority mapping of wildlife blocks. Information on some of the property's natural communities
1097 and sensitive features exist from previous work for Vermont's Natural Heritage Program and a four-town,
1098 science-to-action resource inventory completed by Arrowwood Environmental (desktop review). Allaire
1099 Diamond, an ecologist from Vermont Land Trust, collected and mapped information on uncommon
1100 natural communities and sensitive areas found in two days of field research on the property in the
1101 Ecological Report included here as Appendix F.a. Audubon Vermont conducted a forest bird habitat
1102 assessment on the property in July of 2017 and reported its findings in November, 2017 (Appendix F.c.).
1103 More on-the-ground ecological study is warranted to fill in any gaps in the aforementioned reports.

1104
1105 Besides the specific habitat elements discussed below, the Andrews Community Forest provides habitat
1106 for a range of wildlife species. These include everything from amphibians and reptiles to birds and bats
1107 and wide-ranging carnivores such as fisher, bobcat, fox, and coyote. White-tailed deer are active
1108 throughout the property, with heavy browse in the seedling, sapling, and shrub layers, and beds in or near
1109 hemlock cover. Moose have stripped bark off of striped maples. Bobcat tracks have traversed the ledgy
1110 dry oak area in the northern corner as well as the edge of the small beaver wetland. Coyote, fox, turkey,
1111 fisher, and weasel tracks have been noted. Recent claw marks on American beech trees in at least two
1112 areas, as well as tracks and scat on the VAST trail, indicate the presence of black bears.

1113
1114 The following wildlife habitat elements have been identified in the Andrews Community Forest with their
1115 approximate boundaries shown on the attached natural resource maps.

1116 **9.1 Interior Forest and Connectivity**

1117 The Vermont Conservation Design (2015), a landscape-level conservation prioritization from Vermont
1118 Land Trust and the Vermont Agency of Natural Resources, stated that the entire Property was part of a
1119 'Highest Priority Interior Forest Block' that provides critical ecological function on a statewide level. The
1120 forest is the latest addition to the long-standing 10,000-acre Chittenden County Uplands Conservation
1121 Project.

1122
1123 In addition, the entire property is notable in its contribution to Vermont's physical landscape diversity.
1124 Adjacent to other large blocks of conserved land and with connections to the Winooski River valley and
1125 its floodplain, this property also plays an important role in landscape connectivity, offering a corridor for
1126 wildlife and other species to move.

1127
1128 "Forest interior" habitats are those forests that are distant from human development. The term forest
1129 interior is often used interchangeably with the term "core forests." Forest interior habitat is often defined
1130 as being at least 100 meters from the nearest human disturbance such as a road, house, or agriculture.
1131 Forest interior habitat is usually characterized as containing less forest "edge" than smaller, fragmented
1132 habitats.

1133
1134 Because forest interior habitats are generally large, they can often provide the many life requisites for
1135 species, such as black bear, moose, and fisher which have large home ranges and travel extensive
1136 distances. Species, such as black bear, cover large territories in search of a diversity of habitat elements,
1137 such as wetlands, berry-producing shrubs, mast-bearing food species, and remote denning sites. Black
1138 bears exemplify the type of wildlife that requires large areas of relatively unfragmented habitats.

1139 Community Forests, such the Andrews Community Forest that border on or are connected to other habitat
1140 by some type of corridor, are more likely to be able to support Vermont's large-ranged species like black
1141 bears and bobcats. Therefore, these lands are more likely to have greater species diversity and the wildlife
1142 populations within those forests are more likely to be stable in the long run.

1143
1144 A wide-variety of birdlife in Vermont utilizes the larger contiguous forests available only in interior forest
1145 habitats. These birds include species such as the broad-winged and red-shouldered hawks, owls, and
1146 forest songbirds like the ovenbird, wood thrush, scarlet tanager, pileated woodpecker, Canada warbler,
1147 and black and white warbler. Several of these species suffer from greater nest predation (by animals such
1148 as squirrels, raccoons, snakes, and other birds) and nest parasitism (by other birds such as the brown-
1149 headed cowbird) where nesting grounds are near human disturbance and the habitat edges it creates.

1150 **9.2 Ledges, Cliffs, Talus, and Ridges**

1151 Ledge and cliff habitat develops where bedrock outcrops occur in areas of steep slopes. Ledges and cliffs
1152 can occur as areas of sheer rock wall or as a broken jumble of rocks and crevices. Though there is no
1153 technical distinction, generally ledges are small areas of outcrop within a forested matrix while cliffs have
1154 an open canopy and tend to be larger. Talus consists of a field of large rocks that typically develop at the
1155 base of cliffs and ledges, though can sometimes occur independently of these features.

1156
1157 Ledges, cliffs, and talus can provide important habitat for a wide range of species, depending on the
1158 nature and extent of the rock structures. Vertical rock structure (cliffs) can be important habitat for
1159 species such as nesting peregrine falcon, common ravens, and the small-footed bat. In areas with broken
1160 ledge and talus, the hollows and small caves created by the rock are used extensively by coyote,
1161 porcupine, bobcat, fisher and other weasels, ruffed grouse, and other wildlife as refugia from inclement
1162 weather and for escape cover.

1163
1164 In many areas throughout the northeast, bobcats use ledges for courting and breeding grounds and the
1165 broken ledge (often at the foot of a ledge) for birthing and rearing of their young. Broken ledge is
1166 considered defendable from predators like the coyote that may try to kill and eat bobcat young. Bobcats,
1167 coyote, and fisher are reported to also utilize broken ledge when it is cold and snowy as well as when it is
1168 hot, for relief from the heat. There is some evidence that ledges facing south and west (areas that
1169 generally are more exposed to the sun) may receive higher use by certain species and are more valuable to
1170 wildlife.

1171 **9.3 Mast Stands**

1172 Mast refers to the nuts and seeds of trees and shrubs, many of which are eaten by wildlife. Hard mast
1173 consists of the nuts of trees, especially those of beech and oak. Soft mast refers to the berries of a variety
1174 of species, including woody plants such as serviceberry and cherry. These food resources may be
1175 available only seasonally, usually in fall. A "stand" refers to an area where many of the trees or shrubs are
1176 growing together in one area.

1177
1178 The berries and nuts from mast trees and shrubs provide an important and often essential source of food
1179 for wildlife. Black bears may rely on acorns and beechnuts to provide enough energy for over-wintering
1180 and the production of cubs. These nuts provide a fat-rich food source to bear, white-tailed deer, wild
1181 turkey, squirrels, and many other species. As many as 171 species of birds, mammals, amphibians, and
1182 reptiles use these beech and oak forests as habitat (DeGraaf et al., 1992).

1183 9.4 Deer Wintering Areas

1184 Forests where white-tailed deer congregate during the winter months in Vermont are called deer wintering
1185 areas (also known as deer yards). Deer use these dense stands of mature or maturing evergreen trees in
1186 years with significant snow accumulation. Evergreen trees intercept snow as it falls to the ground,
1187 generally resulting in shallower snow beneath the canopies of these forests. The overhead canopy of
1188 needles also shield deer from the cold. Deer congregate in these areas when snow depths exceed ~15
1189 inches and often remain until the snow melts in spring. The heaviest used wintering areas often have a
1190 southern aspect, though stands with a westerly or easterly aspect are also sometimes used.

1191
1192 By providing easier mobility and protection from the cold, deer wintering areas can be critical in limiting
1193 the energy expenditures of deer and support the continued survival and reproduction of this species along
1194 the northern extent of their range – an area which includes Vermont.

1195
1196 Eastern hemlock, balsam fir, and Northern white-cedar stands provide the best cover and food value to
1197 deer, but pine and spruce will sometimes be utilized. These winter habitats are also home to bobcat,
1198 coyote, and scavenging bear and fisher that come looking for weakened and dead deer in spring. Other
1199 animals such as conifer-nesting birds, porcupines, and fox also utilize these habitats during other seasons.

1200 9.5 Management Objectives

- 1201 ● Provide a diversity of upland, wetland, and riparian habitats for wildlife.
- 1202 ● Identify and accurately map significant wildlife habitat elements.
- 1203 ● Identify an appropriate balance of all resource attributes of and uses for the property.
- 1204 ● Provide a plan for recreation trails with minimal impact on natural resources.

1205 9.6 Management Actions

- 1206 ● Interior Forest and Connectivity:
 - 1207 ○ Utilize multi-aged silvicultural treatments over the majority of the property. Avoid
 - 1208 creating new permanent openings or wide (> 20 feet wide), linear roads and trails.
 - 1209 Consider creating 5-10 acres of young forest/early-successional habitat. Although there is
 - 1210 currently sufficient young forest habitat on the Andrews Community Forest, the function
 - 1211 of this habitat is likely to diminish around the year 2025 due to maturation of the forest.
 - 1212 In order to maintain this valuable habitat condition it is recommended to create a new
 - 1213 area(s) sometime after 2025.
 - 1214 ○ Management guidelines that enhance the value of the forest for a variety of deep forest
 - 1215 species such as bear, fisher, and a variety of songbirds is recommended. This can include
 - 1216 the retention and establishment of older growth forest areas, maintenance of a multi-
 - 1217 layered forest canopy, maintenance of downed and standing dead and live woody debris
 - 1218 and snags, maintenance of small natural forest openings and food sources, and
 - 1219 maintenance of canopy closure over trails.
- 1220 ● Ledge, Cliff, Talus, and Ridges:
 - 1221 ○ A forested canopy should be maintained over these rock habitats that occur in a forested
 - 1222 matrix.
 - 1223 ○ The selective removal of trees near these habitats is compatible with continued use by
 - 1224 wildlife.
 - 1225 ○ Ledges are likely to contain very steep slopes and forest management activities should be
 - 1226 conducted only in a manner consistent with minimizing the erosion of soils.

- 1227 ○ Maintain a 100' buffer to broken ledge and talus that provide concealment cover for
1228 wildlife.
- 1229 ● Mast Stands:
- 1230 ○ Forest management activities that promote the establishment, maintenance, and long-term
1231 persistence of these species within the forest should be encouraged.
- 1232 ○ Use of the nut and berry mast by wildlife, particularly sensitive species such as black
1233 bear, can be negatively impacted by the presence of human development and many
1234 human activities. For this reason, human access and use of these stands, including
1235 recreational activities, should be limited and carefully managed.
- 1236 ○ Seasonal restrictions on recreation, such as limiting heavy use by humans during fall (for
1237 beech and oak stands) is appropriate. Limit use in fall (Sept 15-Nov 15) in areas
1238 exhibiting extensive bear use.
- 1239 ○ Trail construction should avoid cutting of mast-producing species.
- 1240 ● Deer Wintering Areas:
- 1241 ○ The Hemlock and Hemlock-Northern Hardwood forest communities on the parcel could
1242 be managed specifically to enhance the conifer overstory and hemlock regeneration,
1243 which would serve to enhance the value of the habitat for wintering deer. The best deer
1244 wintering habitats maintain at least 70% closed forest canopy of evergreen trees.
1245 Additional forest management activities that are compatible with the continued use of
1246 these habitats by deer include the creation of small areas (less than one acre) of food
1247 production, including the promotion of fruit-bearing trees and shrubs, and the creation of
1248 young early succession forest.
- 1249 ○ Avoid the introduction of new trails, especially which would be used in the winter, in
1250 these forest types.
- 1251 ○ Hiking trails within actively used deer wintering areas should be closed during winter
1252 months. Use during other seasons is compatible.
- 1253 ○ Organized recreational activities such as snowshoeing, cross country skiing, and
1254 snowmobiling in and near deer wintering areas should be discouraged.

1255 **10. Recreation**

1256 **10.1 History of Recreation and Trail Design Consideration**

1257 The Andrews Community Forest contributes significantly to the town's scenic rural and natural character.
1258 The natural communities of the forest are not confined to human-drawn boundaries. Therefore,
1259 conservation and stewardship of wildlife habitat, water resources, and vegetation must extend beyond
1260 those boundaries as well.

1261

1262 The Andrews Community Forest offers recreation opportunities to town residents and visitors. A 2018
1263 visioning survey of town residents indicated that many Richmond residents are eager to hike, run, walk,
1264 bike, hunt, snowshoe, ski, view birds and wildlife, walk dogs, and picnic in the forest. Town residents
1265 identified connectivity with abutting trail systems to be an important attribute of trail design. The
1266 community's management and use of the property must protect the ecological, timber, recreational,
1267 educational, open space, and scenic resources of the town and property.

1268

1269 The forest, when owned by the Andrews family, was not posted and allowed hunting, walking,
1270 snowshoeing, and skiing. The forest was also managed for timber, leaving logging roads scattered

1271 throughout the property. Some of these skid roads are unsuitable for recreational use due to their steep
1272 grades, poor drainage, and potential for erosion. Sustainable trail design will redirect visitors onto trails,
1273 reducing use of existing skid roads when appropriate. Other roads (the VELCO road, the Maple Wind
1274 Farm road on the eastern boundary, and the VAST trail) act as important recreational and management
1275 corridors throughout the property and remain in use.

1276 **10.2 Conservation Easement**

1277 The Conservation Easement allows for non-motorized, non-mechanized recreational use of the forest (i.e.,
1278 walking, snowshoeing, skiing, and hunting). Additionally, Section IIIA of the easement allows for
1279 “snowmobiling, and for non motorized mechanized recreation such as mountain biking, and by animals
1280 capable of transporting humans...” if the Management Plan provides the rules for these three uses and
1281 guides the management of recreational infrastructure.

1282 **10.3 Snowmobiling**

1283 The ACF contains a snowmobile trail that was previously part of the VAST trail network. Snowmobiling
1284 will be permitted in the ACF if and when VAST seeks to formally reestablish the trails as an official part
1285 of the VAST trail network and the ACF approves a use contract ensuring all snowmobiling is conducted
1286 in a manner compatible with the Management Plan’s other goals and objectives. The Committee will meet
1287 with VAST representatives periodically to determine if and when the trail might be reconnected to the
1288 VAST network and to ensure any snowmobile usage is compatible with the other management goals for
1289 the Community Forest.

1290 **10.4 Hunting**

1291 Hunting is allowed on the property in accordance with all state and federal laws and the activities are
1292 within the stated allowable uses. Indigenous people have hunted in the forests in this area for thousands of
1293 years. As of 2021, citizens of recognized Abenaki tribes may obtain free hunting licenses from the state of
1294 Vermont. When the property was owned by the Andrews family, it was open to both hunting and
1295 trapping. Many members of the community are still interested in using the property to hunt. A smaller
1296 number of residents are interested in using the property for trapping. However, the property did not
1297 previously contain recreational trails, such as those proposed for development in the Andrews Community
1298 Forest. The coexistence of these various uses in the same forest presents a management challenge. The
1299 Town will place an emphasis on education about hunting season safety for both hunters and non-hunters.
1300 Trapping will not be permitted on the Town Forest because of the safety hazard it presents to visitors and
1301 their pets, who may be traveling both on and off trail.

1302 **10.5 Connectivity to Surrounding Properties**

1303 The conserved lands around the ACF create opportunities for a larger, connected trail network. Consistent
1304 with the Management Plan’s recreational objectives, the ACF Trail Design seeks to connect to existing,
1305 mapped, public trails on properties adjoining the ACF. The VYCC campus, which adjoins the property to
1306 the east, has a number of available multi-use trails. VYCC supports trail development that connects
1307 VYCC trails to ACF trails. To ensure that the VYCC campus serves their Farm and Conservation
1308 Programs and the Corps Members who live and work on campus, VYCC requests that VYCC be a partner
1309 in conversations regarding future trail development as it relates to connectivity with the VYCC campus.
1310 The ACFC has an established relationship with VYCC and there is currently one trail connecting the two
1311 properties and trail networks. Adjoining the ACF to the north is a 173-acre property owned by David
1312 Sunshine and Carol Jordan. The property contains a multi-use trail network. The trail network links to

1313 trails on adjoining properties available for public use, including the Old Jericho Road Trail. The ACF
1314 Trail Design includes a northerly connection to Sip of Sunshine Trail located on the Sunshine/Jordan
1315 property. Other surrounding property owners have trails on their property that are open to the public. The
1316 ACFC’s trail design seeks to develop a trail system that connects to these existing, mapped, public trails.
1317 Management practices will also include working with neighboring landowners to develop signage that
1318 indicates land ownership and allowed uses.

1319 **10.6 Trail Design Map**

1320 The Trail Design Map (See Map C) reflects the ACFC’s best efforts to achieve a multi-use trail network
1321 that is consistent with the criteria laid out in the 2018 first edition of the Management Plan, and that
1322 minimizes ecological impacts of trail-based recreation. Considerable expert consultation, public input
1323 and ACFC deliberations went into developing this Trail Design Map. Much of this outreach is outlined
1324 on pages 8 and 9 of this revised Management Plan. In addition, ACFC’s Response to Community
1325 Feedback on ACF Trail Network Proposal in Spring 2022 can be found on the Town website.

1326
1327 The 2018 Trail Concept Map, included as Appendix A.a. in the first edition of the Management Plan, was
1328 also the product of extensive public input and committee deliberation and reflected a compromise of
1329 many recreational uses. It was intended as a “roadmap to trail construction” in which the proposed trails
1330 “reflect the approximate desired location of future trails, pending the results of the coarse- and fine-scale
1331 ecological assessment”(p. 27).

1332
1333 The present Trail Design Map was informed by the original vision captured in the Trail Concept Map, and
1334 was laid out with the help of trail designers and field ecologists following the same top-priorities as those
1335 articulated in the first Management Plan:

- 1336
- 1337 ● Establish connectivity between existing trails on abutting properties.
 - 1338 ● Establish one long loop from the parking area, and many shorter loops.
 - 1339 ● Create a lower density of trails above the powerlines and higher density below the powerlines to
1340 place equal emphasis on conservation of the interior forest areas of the property, while still
1341 inviting and encouraging public visitation.
 - 1342 ● Avoid sensitive areas whenever possible and give an appropriate buffer to sensitive areas, as
1343 delineated by professional ecologists.
 - 1344 ● Provide shorter loops at a lower grade from the parking area to ensure the property is accessible
1345 and inviting to people of all ages and abilities.
- 1346

1347 The Trail Design Map in this Second Edition of the Management Plan was approved by the ACFC, the
1348 easement holders, and the Selectboard in 2022.

1349 **10.7 Process for Constructing Approved Trails**

- 1350 ● A hired professional trail designer will flag a route that, to the best of their ability, follows the
1351 route appearing in the approved Trail Design Map.
- 1352 ● Arrowwood, or another professional ecologist, will walk the flagged route and a 50 foot buffer on
1353 either side to determine whether there are any fine-scale features (rare, threatened, or endangered
1354 species) that would be adversely impacted by trail development in that particular location. If there
1355 are, the trail designer will consult with the ecologist to identify a suitable re-route.

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- The Committee may make minor adjustments to the Trail Design Map to maintain a 200' buffer between the trail and known sensitive areas, when possible, as identified and mapped in existing ecological assessments. When a 200' buffer cannot be reasonably achieved, the Conservation Easement terms sets a minimum standard for what is acceptable, and the Arrowwood Environmental Natural Resource Guidance Toolkit offers further guidance. The Committee acknowledges that this 200 foot buffer is aspirational and a best practice, but may not always be possible while achieving the basic objectives of the Trail Design (outlined above). Nevertheless, the Committee will strive to achieve this buffer.
 - Once a trail corridor has been assessed by Arrowwood (or another professional ecologist) and deemed suitable for trail construction, the Committee will engage with the community via an open public process to ensure the Trail Design is consistent with the community's goals at such time and continues to comply with Management Plan's objectives to offer recreational opportunities while protecting the ACF's natural resources.
 - Following easement holder and Selectboard approval, the Committee will proceed to work with the Richmond Trails Committee, Richmond Mountain Trails, and/or a hired trail-builder to install trails which meet standards and designs agreed upon by the Committee.
 - The ACFC will adopt trail names that bring Indigenous presence and language back to this landscape (rather than contribute to their erasure). Consult Appendix D Part 4 for suggested names that were proposed and vetted by Abenaki tribal citizens, culture keepers and language experts.
 - The ACFC will continue to seek and obtain grant funding as necessary to support the design, construction, and maintenance of trails approved and included on the Trail Design Map.

1378 **10.8 Process for Considering Future Trails**

1379 It is the ACFC's intention that the Trail Design Map represents an enduring, sustainable trail network that
1380 will not be expanded, to protect not only the natural resources within the ACF but also to honor the
1381 desires of the Andrews family and community intent captured in the original Management Plan.

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- The addition of any new future trails not reflected on the Trail Design Map shall not be approved for construction until a new Trail Design Map is adopted through a full revision of the management plan, which is subject to public review and approval by the Selectboard, and the easement holders. The Trail Design Map shall not be revised independently of the Management Plan.
 - In considering the appropriateness of adopting any new future trails, the Committee will (1) seek appropriate professional guidance to assist it in evaluating the impact of trail density on the ACF's wildlife and forested ecosystems; and (2) engage with the community via an open public process to ensure that any changes to the trails design are consistent with the community's goals at such time and continue to comply with Management Plan's objectives to offer recreational opportunities while protecting the ACF's natural resources.

1393 **10.9 Potential Recreation Partnerships**

- 1394
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- 1399
- Richmond Trails Committee
 - Richmond Mountain Trails/Vermont Mountain Bike Association (VMBA)
 - Maple Wind Farm
 - VYCC
 - Richmond Land Trust
 - Scouts

- 1400 ● Community Senior Center
- 1401 ● Western Abenaki Tribes
- 1402 ● Richmond Racial Equity

1403 10.10 Management Objectives

- 1404 ● Develop and promote a community forest that accommodates a wide variety of recreation
- 1405 opportunities (hunters, mountain bikers, walkers, etc.), subject to the limitations of the
- 1406 Conservation Easement and this Management Plan as it may be revised from time to time.
- 1407 ● Preserve sensitive areas and route trails around those areas.
- 1408 ● Provide a trail system that is well-connected to trails on adjacent properties and Richmond
- 1409 Village.
- 1410 ● Support local businesses by offering recreational opportunities.
- 1411 ● Enhance cultural and ecological knowledge about the ACF and surrounding landscape for trail
- 1412 users.

1413 10.11 Management Actions

- 1414 ● **Trail Design Build:**
 - 1415 ○ Establish trail system and build new multi-use trails in conformity with the ACF Trail
 - 1416 Design Map and this Management Plan
 - 1417 ○ Choose trail names that bring Indigenous presence and language back to this landscape.
 - 1418 Consult Appendix D Part 4 for suggested names that were proposed and vetted by
 - 1419 Abenaki tribal citizens, culture keepers and language experts.
 - 1420
- 1421 ● **Steward:**
 - 1422 ○ Maintain a trailhead kiosk at the parking lot.
 - 1423 ○ Create signage about hunting seasons, hunting safety, trail etiquette, agricultural uses of
 - 1424 the property, allowed user groups, property ownership, cultural and ecological
 - 1425 information, etc., both in the forest and at the trailhead kiosk.
 - 1426 ○ Include the short version of the Land Acknowledgment at all signed entrances, on kiosks
 - 1427 and on maps. The language approved by ACF on 1/31/22 for this purpose is: “The
 - 1428 Andrews Community Forest is located within Ndakinna, the unceded homeland of the
 - 1429 Western Abenaki People, who have a unique connection to this land and have been its
 - 1430 traditional stewards for millenia.” (See Appendix D, Part 1.)
 - 1431 ○ Install a bike rack at the entrance to the Community Forest to promote bicycling.
 - 1432 ○ Educate the public about hunting seasons and hunting season safety through signage and
 - 1433 on digital platforms (Front Porch Forum, Facebook, etc.).
 - 1434 ○ Work with neighboring landowners to appropriately sign changes in landownership and
 - 1435 allowed uses.
 - 1436 ○ If and when VAST seeks to formally reestablish the former VAST snowmobile trail,
 - 1437 establish a use agreement with VAST to ensure snowmobiling is conducted in a manner
 - 1438 compatible with the Management Plan.
 - 1439 ○ Establish signage on all trails that includes the Abenaki language trail name and its
 - 1440 definition or image as suggested in Appendix D, Part 4. Briefly explain the rationale for
 - 1441 this naming approach on maps, kiosk, and website. Create and maintain corresponding
 - 1442 navigational aids throughout the forest (trail markers, blazes, signage, and maps).
 - 1443 ○ Work with Richmond Trails Committee to conduct routine trail maintenance. The ACF
 - 1444 Committee will coordinate with these groups to organize, advertise, and facilitate trail
 - 1445 work days.

- 1446
- 1447
- 1448 ● **Monitor** impacts of recreational use on natural resources:
 - 1449 ○ Pursue opportunities to continue learning more about the impacts of recreation on
 - 1450 wildlife and to translate this learning into on-the-ground management practices.
 - 1451 ○ Consider impacts on sensitive ecological and cultural areas. If problems are detected,
 - 1452 pursue more detailed monitoring or investigation into causes, severity, and potential
 - 1453 actions to mitigate impacts.
 - 1454 ○ Continue to consider whether and how recreation usage rules may need to be modified
 - 1455 (e.g., seasonally) to reduce impacts on wildlife and natural resources.
 - 1456 ○ Engage recreational groups (VAST, Trails Committee, Richmond Mountain Trails,
 - 1457 hunters) on a regular basis to obtain feedback about user group coordination and
 - 1458 conflicts.
 - 1459 ● **Explore and Document** future opportunities:
 - 1460 ○ In partnership with the Selectboard, the Town Highway Department, and the Richmond
 - 1461 Land Trust, explore potential options for creating a walking/biking connection from the
 - 1462 ACF to Richmond Village.
 - 1463 ○ Explore expansion of groomed winter trails for public cross-country skiing and fat biking
 - 1464 in appropriate sections of the ACF.
 - 1465 ○ Explore opportunities to host trail-based events and races on forest trails if ecological
 - 1466 monitoring activities indicate an ability to do so without negative impacts to forest
 - 1467 ecosystems and trail infrastructure. Committee members will explore strategies to
 - 1468 measure the impacts of these events on forest ecosystems and trail infrastructure, and will
 - 1469 seek to employ these before and after events.

1470 **11. Agriculture**

1471 Maple Wind Farm, the current farm leasee, is a diversified pasture-based livestock, poultry, and organic
1472 vegetable farm. The farm started in 1999 in Huntington, and in 2013, the farm acquired 187 acres of
1473 former Andrews/Gray Rocks Farm land to begin Richmond operations. Maple Wind also currently farms
1474 eight acres of the community forest. They use the “lower meadow” and a meadow along the powerline
1475 right-of-way for grazing cattle. Maple Wind typically grazes 30 adult bovines and 30 calves for 10-16
1476 days per year. The Town and Maple Wind are interested in continuing this arrangement and will negotiate
1477 a long-term lease.

1478

1479 Maple Wind Farm has a right-of-way for agricultural purposes over the main farm road on the Andrews
1480 Community Forest extending from the Dyer-Chadwick property to Maple Wind Farm’s upper meadow.
1481 The Town has a right of way over the northern edge of Maple Wind Farm’s upper meadow. The VAST
1482 trail has operated on a year-to-year basis over sections of both these roads/rights of way. The Town will
1483 work with Maple Wind Farm to ensure compatible shared use of these two roads and rights of way.

1484

1485 Maple Wind Farm has placed a high tensile electric fence around their grazing area in the community
1486 forest’s lower meadow. A gate through the fence will allow for public access to the meadow when the
1487 pasture is not in use for grazing. When the pasture is in use, the “cutover trail” will be closed.

1488

1489 There may be opportunities in the forest for a community garden/orchard, and agricultural education and
1490 demonstration projects. Under the Conservation Easement, agriculture is permitted where the forest has

1491 already been cleared. The ACF Committee will remain open to proposals for alternative uses of the
1492 agricultural lands, but would not take lightly the decision to stray from a long-term, mutually-beneficial
1493 agricultural partnership.

1494 **11.1 Potential Agriculture Partnerships**

- 1495 ● Maple Wind Farm
- 1496 ● Richmond Farmers Market
- 1497 ● Richmond Community Kitchen
- 1498 ● The Farm at VYCC
- 1499 ● NOFA Vermont
- 1500 ● Vermont Farm Bureau

1501 **11.2 Management Objectives**

- 1502 ● Recognize the importance of agriculture in Richmond and Vermont's heritage and continue to
1503 allow agricultural uses that are compatible with other management goals.
- 1504 ● Promote opportunities for agriculture education and demonstration on the parcel, perhaps in
1505 conjunction with Maple Wind Farm or other agricultural entity with a vested interest in the
1506 property.
- 1507 ● Develop agreements with Maple Wind Farm to allow coexistence of agriculture and public
1508 access.

1509 **11.3 Management Actions**

- 1510 ● Work with Maple Wind Farm to develop a lower meadow use agreement and co-manage the
1511 rights-of-way.
- 1512 ● Place signage alerting trail users to the electric fencing.
- 1513 ● Install a gate on the western side of the meadow to allow continued public access across the
1514 meadow.
- 1515 ● Explore partnerships with above organizations for educational programming and demonstration
1516 projects within the forest.
- 1517 ● Explore opportunities for a community garden in the pastures within the Community Forest.

1518 **12. Education**

1519 With its natural features and its cultural history, the Andrews Community Forest will provide enriching
1520 educational experiences for community members from elementary school students, to college students, to
1521 curious adults.

1522
1523 The Town has expanded the lower parking area enough to provide a school-bus turnaround. In addition,
1524 parking may be allowed on the landing area to accommodate larger educational groups and people of all
1525 abilities with prior permission. Instructors interested in using the Community Forest for educational
1526 purposes should contact the ACF Committee to discuss parking arrangements.

1527
1528 Possible educational opportunities include:

- 1529 ● Climate monitoring program
- 1530 ● Biodiversity monitoring program
- 1531 ● Trail building and maintenance (in partnership with VYCC)

- 1532 ● Tree/bird identification programs
- 1533 ● Sustainable forestry and forest products education
- 1534 ● Sustainable agriculture education
- 1535 ● School field trips on ecology and cultural history
- 1536 ● Mountain biking skills clinics
- 1537 ● Kids summer camps and after school programs
- 1538 ● Guided hikes and snowshoes on forest ecology
- 1539 ● Orienteering workshops

1540 **12.1 Potential Education Partnerships**

1541 There are many schools and organizations that the Andrews Community Forest could partner with for
1542 educational programming:

- 1543 ● Richmond Elementary School
- 1544 ● Camels Hump Middle School
- 1545 ● Mount Mansfield Union High School
- 1546 ● University of Vermont Field Naturalist Program
- 1547 ● University of Vermont Rubenstein School and Environmental Studies Program
- 1548 ● Vermont Youth Conservation Corps
- 1549 ● Green Mountain Audubon Center
- 1550 ● Boy and Girl Scout Troops
- 1551 ● Maple Wind Farm
- 1552 ● Nature Conservancy
- 1553 ● Essex Technical School
- 1554 ● Richmond Recreation Committee
- 1555 ● Radiate Art
- 1556 ● Richmond Racial Equity
- 1557 ● Abenaki Nation of Missisquoi
- 1558 ● The Nulhegan Band of the Coosuk Abenaki Nation
- 1559 ● Vermont Land Trust
- 1560 ● Vermont Forests, Parks, and Recreation
- 1561 ● Mount Mansfield Modified Union School District (MMMUSD) and MMMUSD summer camps
- 1562 ● Part 2 After School and Summer Camps
- 1563 ● Green Mountain Orienteering Club
- 1564 ● Birds of Vermont Museum

1565 **12.2 Management Objectives**

- 1566 ● Educate local students and community members about natural communities, biodiversity, cultural
1567 history, the working forest, and good stewardship practices.
- 1568 ● Engage local students and community members in data gathering/analysis.
- 1569 ● Recognize and take advantage of the educational opportunities created by recreational use.
- 1570 ● Use the forest as a model and example of the value of healthy forests to the community, including
1571 educational demonstrations and tours.

1572 **12.3 Management Actions**

- 1573 ● Partner with the schools and organizations listed above to hold programming in the forest.

- 1574 ● Place interpretive signage throughout the forest about natural communities, stewardship, and
1575 cultural history.
- 1576 ● Host community events with an educational component.
- 1577 ● Use timber management activities as an opportunity to educate the community about proper
1578 forest management.
- 1579 ● Modify educational programming around hunting season.
- 1580 ● Create and maintain locations for birding and viewing wildlife.

1581 **13. Legal Agreements on the Property**

1582 There are many agreements, right-of-ways, and easements that are key to the management of the forest.

1583 **13.1 Agricultural Lease**

1584 Maple Wind Farm is the adjoining land owner and that land includes the remaining acres of the original
1585 Andrew farm. Maple Wind Farm has historically used eight acres of what is now the community forest
1586 for grazing cattle. For 10-16 days each year, 30 adult bovines and 30 calves graze on the forest's lower
1587 meadow and the meadow by the VELCO powerline. Both parties are interested in continuing this
1588 arrangement and will explore the possibility of a long-term lease. Vermont Land Trust will need to
1589 approve this lease before it is finalized. No long-term agricultural easements on the property will be
1590 allowed.

1591
1592 In negotiating this lease, the Committee seeks to retain a crossover trail across the lower portion of the
1593 pasture linking the VELCO road with the Maple Wind Farm road. This trail would be open anytime cows
1594 are not grazing in the pasture; when cows are grazing, the Committee proposes closing this trail and
1595 installing appropriate signage to redirect visitors to other routes on the property.

1596 **13.2 Powerline Rights-of-Way: VELCO**

1597 A VELCO powerline runs through the community forest and VELCO owns the right-of-way. VELCO
1598 needs road access to the right-of-way on occasion for maintenance and repairs to the powerline. In 2018,
1599 VELCO improved a road from the forest entrance on Route 2 to the powerline; they used the upper
1600 landing area to stage their work. Following this work, they re-seeded the landing and the road above the
1601 landing, and installed waterbars on the road below the landing. At certain periods, VELCO may need to
1602 close some or all of the forest to perform larger projects on the powerline. The ACF Committee should
1603 coordinate with VELCO to prepare for such events and fully inform the public of the closure.

1604 **13.3 Powerline Rights-of-Way: Green Mountain Power**

1605 Green Mountain Power has a 75-foot right-of-way adjacent to the VELCO line in the same powerline
1606 corridor. Within this corridor, Green Mountain Power manages vegetation. The Committee will work to
1607 better understand the vegetation management goals and practices, the landowner's (Town's) rights, to
1608 advise the Selectboard to make an informed decision about vegetation management within the Powerline
1609 corridor, and to communicate this decision broadly to Community Forest visitors.

1610 **13.4 Management Objectives**

- 1611 ● Develop agreements that allow partners to work within the forest while limiting the impact (both
1612 ecological and human impact) of such work.

1613 **13.5 Management Actions**

- 1614 ● Work with VELCO and GMP to understand and select vegetation management strategies in the
- 1615 powerline right-of-ways which are safe, effective, and environmentally responsible.
- 1616 ● Communicate with the public about grazing plans or powerline management activities that may
- 1617 influence the public’s experience on the property.
- 1618 ● Manage public use during powerline work or grazing periods to mitigate public safety hazards.
- 1619 ● Establish positive working relationships with Maple Wind Farm, VELCO, and Green Mountain
- 1620 Power to ensure that their use of the property is compatible with public visitation.

1621 **Maps**

- 1622 A. Trail Concept Map 2018 - zones
- 1623 B. Trail Concept Map 2018 - possible trails
- 1624 C. Trail Design Map
- 1625 D. Conservation Easement
- 1626 E. Interim Management Plan (applicable through 12/31/18)
- 1627 F. Arrowwood and Sinuosity proposed map 2021

1628 **Appendix ([link to](#))**

- 1629 A. Chart: Evolution of Allowed/Prohibited Uses Through Planning Phases
- 1630 B. Steering Committee Bylaws
- 1631 C. Conservation Easement
- 1632 D. Indigenous Land Acknowledgment and Land Use
- 1633 E. Baseline Documentation Report
- 1634 F. Ecological Assessments
 - 1635 a. Andrews Farm Ecological Assessment – Allaire Diamond
 - 1636 b. Four Town Ecological Assessment - Arrowwood Environmental
 - 1637 c. Forest Bird Habitat Assessment and Management Recommendations (Hagenbuch, 2017)
- 1638 G. Results and Comments from Public Meetings
- 1639 H. Interim Management Plan (March 2018-December 2018)
- 1640

1641 **References**

- 1642 Arrowwood Environmental Natural Resource Guidance Toolkit. 2018. Vermont Town Forest Recreation
1643 Planning.
- 1644 Audubon Vermont and the Vermont Department of Forests, Parks, and Recreation. 2011. *Silviculture with*
1645 *Birds in Mind: Options for Integrating Timber and Songbird Habitat Management in Northern Hardwood*
1646 *Stands in Vermont.*
- 1647 Barre Community Forest Management Plan Committee. (2013, 2 27). Barre Community Forest
1648 Community Forest Plan. *Community Forest Plan for the Barre Community Forest.* Vermont: Barre Town
1649 Selectboard.
- 1650 Bennington County Conservation District. (2016, January). Final Management Plan, The Greenberg
1651 Headwaters Park. Bennington, VT: Town of Bennington.
- 1652 Cotnoir, Alexander W. (n.d.) An Abenaki History of Maple <https://abenakitribe.org/maple-syrup>.
1653 Chenevert, Brian. 2021. Maple sugaring among the Abenaki and Wabanaki Peoples.
1654 <https://abenakitribe.org/maple-syrup>
1655
- 1656 Cummings, Angus B. 2019. Farm to Forest: The Andrews Community Forest. University of Vermont
1657 senior thesis archived at:
1658 <https://scholarworks.uvm.edu/cgi/viewcontent.cgi?article=1064&context=envstheses>
1659
- 1660 Degraaf, R.M. et al. 1992. *New England Wildlife: Management of Forested Habitats.* General Technical
1661 Report NE-144. Amherst, MA. U.S.D.A., Forest Service.
1662
- 1663 Diamond, A. 2017. Rapid Ecological Assessment of the Richmond Town Forest. Vermont Land Trust.
1664 Richmond, VT.
- 1665 Doherty, Prudence, Robert Florentin and Peter A. Thomas. 1996/Revised 1997. Phase I and II
1666 Archeological Studies Richmond BRZ 1445(18) Richmond, Vermont. Submitted to Vermont Agency of
1667 Transportation. 72 pages.
- 1668 Hagenbuch, S. (2017, November). Forest Bird Habitat Assessment and Management Recommendations.
1669 Huntington, Vermont: Audubon Vermont.
- 1670 Haviland, William A. and Marjory W. Power. 1994. *The Original Vermonters: Native Inhabitants Past*
1671 *and Present.* University of Vermont. Hanover and London: University Press of New England.
1672
- 1673 Hawes, Ellen and Markelle Smith. 2005. *Riparian Buffer Zones: Functions and Recommended Widths.*
1674 Yale School of Forestry and Environmental Studies.
1675
- 1676 Longstreth, Julie. 2007. Everett and Mary Jo Andrews' Farm. in Riggs, H.W. et al. *Richmond, Vermont:*
1677 *A History of More Than 200 Years.* Richmond, VT: Richmond Historical Society, pp. 389-393.
1678
- 1679 RJ Turner Company. 2008. *Eaton Forest Management Plan.* Bristol, Vermont: Town of Warren
1680 Conservation Commission.

- 1681 Thomas, Peter A., Robert Stone, Nanny Carder, and Robert Florentin. 1995. Archaeological Site
1682 Identification Evaluation and Mitigation pf VT-CH-619 for Richmond TH 2407, Richmond, Chittenden
1683 County, Vermont. 147 pages.
1684
1685 Thomas, Peter A., 2007. Richmond's ancient past, in Riggs, Harriet (ed). 2007. Richmond, Vermont: A
1686 History of More than 200 Years. Richmond Historical Society. Submitted to Vermont Agency of
1687 Transportation.
1688
1689 Thompson and Sorenson. 2000. Wetland, Woodland, Wildlife: A Guide to the Natural Communities of
1690 Vermont. The Nature Conservancy and the Vermont Department of Fish and Wildlife: Montpelier, VT.
- 1691 UNESCO. 2010. Atlas of the world's languages in danger.
1692 <https://unesdoc.unesco.org/ark:/48223/pf0000187026>
1693
1694 Vermont Department of Fish & Wildlife. 2015. *A Landowners Guide: Wildlife Habitat Management for*
1695 *Lands in Vermont.*
1696
1697 Vermont Department of Fish and Wildlife and the Agency of Natural Resources. 2004. *Conserving*
1698 *Vermont's Natural Heritage. A Guide to Community-Based Planning for the Conservation of Vermont's*
1699 *Fish, Wildlife, and Biological Diversity.*
1700
1701 Wiseman, Frederick M. 1995a. Gift of the Forest: The Abenaki, Bark, and Root. Abenaki Educational
1702 Series, Handbook No. 1. Vermont: Ethan Allen Homestead Trust.
1703
1704 Wiseman, Frederick M. 1995b. The Abenaki People and the Bounty of the Land. Abenaki Educational
1705 Series, Handbook No. 2. Vermont: Ethan Allen Homestead Trust.
1706
1707 Wiseman, Frederick Matthew. 2001. The Voice of the Dawn: An Autohistory of the Abenaki Nation.
1708 Hanover and London: University Press of New England.
1709
1710
1711
1712
1713
1714
1715
1716
1717
1718
1719
1720