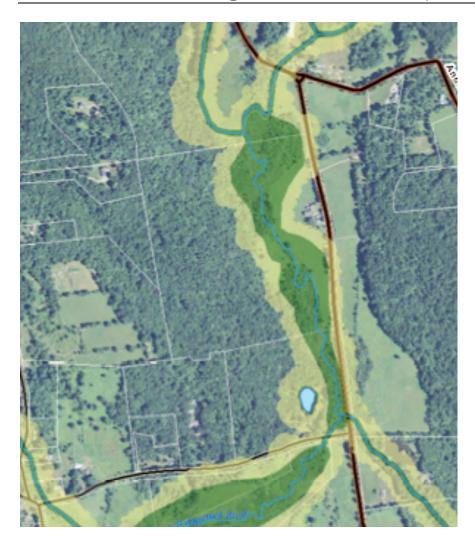


Kent Land Trust Strategic Reassessment Project Final Report



Prepared For: Connecticut Institute for Resilience and Climate Adaptation (CIRCA)

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1. About the Kent Land Trust

The Kent Land Trust (KLT) is a local community land trust based in the foothills of northwest Connecticut, along the Appalachian Trail and the Housatonic River and within a landscape of wildlife corridors, green valleys, and watersheds supporting a diverse array of species. Established in 1989, KLT's mission is to preserve natural resources in Kent and surroundings through land protection, stewardship, public outreach, education and research.

Historically, KLT's preservation efforts have focused on priorities identified within Town and regional conservation plans, including the Town's *Plan of Conservation and Development* that identifies 23 "Kent Town Character Areas". KLT's stewardship program includes regular monitoring and management, with particular emphasis on large projects clearing invasive species and restoring grassland, early successional and forest-interior wildlife habitats. Several of KLT's preserves have vernal pools. Each spring we monitor these pools for use by dependent species. Similarly, at spring and fall migration times, we document bird species within KLT preserves. On one preserve where KLT recently restored early successional habitat, cerulean warblers were captured in mist nets for the first time in 11 years.

KLT conducts a full program of public education, informational, and recreational activities. We sponsor public hikes 4-5 times per year; all but one of KLT's fee-held properties are open to the public, and eight have trail systems. We have strong relationships with local public and private schools who partner with us in educational programs and wildlife research. We cosponsor public programs with local conservation organizations, including the Kent Conservation Commission and the Housatonic Valley Association. We manage the Town Community Garden on KLT land, with participants including individuals, nonprofit groups, the Episcopal Church, town food bank, and local nursery school. Each year on Memorial Day we host a free, town-wide Community Conservation Picnic with activities for families.

KLT convenes regional meetings of land trusts to improve networking and information sharing among conservation practitioners in Northwest Connecticut. Finally, KLT provides technical assistance to area land trusts, sharing our knowledge of the land trust accreditation process and policy models with others interested in achieving this goal or improving their practices.

2. Project Goals

The primary goal of the Strategic Reassessment Project ("The Project") is to develop a modified land acquisition and land management strategy for the Kent Land Trust. The new model will strike a balance between cultural, historic, and aesthetic considerations and natural resource criteria linked to climate resilience. Moving forward, another goal is to increase engagement with conservation partners in associated efforts to develop more sustainable natural and human communities.



3. Methods

The first phase of the The Project was to develop a revised, quantitative system for evaluating potential conservation properties, placing greater emphasis on natural resources preservation and climate resilience. Historically, KLT has heavily weighted cultural, historical, and aesthetic factors when evaluating land. Priorities have included preserving the Town's rural character, preserving scenic views, and protecting 23 "Town Character Areas" identified in the Town of Kent *Plan of Conservation and Development*. All of these priorities are retained in the Strategic Reassessment; however, the revised model (see Table 1) uses a scoring system that explicitly weights each criterion in order to balance aesthetic and cultural considerations with natural resource preservation and the promotion of climate resilience. The new, more scientific approach is intended to maximize the overall conservation value of KLT's land protection efforts. The revised model also informs KLT's evolving land management strategy, pointing to more comprehensive, science-based management priorities for existing properties.

Table 1: Property Selection Criteria and Scoring System

Criterion:	Point Value:
Property size (minimum 25 acres)	0-25 points, based on 6 size categories
Protection of Town Character Areas	Up to 15 points, based on proximity
Recreational value	Up to 10 points
Wetland buffer zones	Up to 10 points, based on % of property
Riparian buffer zones	Up to 10 points, based on % of property
Critical habitats	5 points if present
Surface water	Up to 5 points, based on number of features
Forest cover	Up to 5 points, based on % of property
Agricultural soils	5 points if present
Contiguity with protected land	Up to 5 points, based on abutting or
	connecting protected areas
Scenic ridgeline/horizon belt	5 points if present on property
<u>Unique features</u>	<u>Up to 5 points</u>
Total Score =	Maximum of 100 points

As seen in Table 1, the scoring system places moderate emphasis on cultural and aesthetic considerations, with a total of 30% of a property's potential score coming from proximity to Town Character Areas, recreational value, and any mapped scenic features. Another 25% of a property's potential value is based on its size, with proportional point values assigned six size categories.

The remaining 45% of a property's score relates to the preservation of natural resources that promote climate resilience. Riparian and wetland buffer zones and surface water features together represent up to 25% of a property's score, reflecting the important role of these areas in providing flood protection and protecting water quality in a world characterized by more intense storms. Forest cover is accounted for due to its role in preserving biodiversity, stabilizing climate, and protecting water quality. Forest cover is not heavily weighted, however, because it is not a



locally scarce resource. Biodiversity protection is accounted for indirectly, through the model's inclusion of wetland, riparian, and forest habitats, as well as directly, with 5% of a property's score coming from any mapped critical habitats. Finally, any designated agricultural soils, which represent a bulwark against climate change-induced agricultural stress, boost a property's score by 5%.

The second phase of The Project involved gathering appropriate maps and other references. Tax maps and associated databases provided a range of property information including address, acreage, ownership, and assessed property values. Critical habitats were identified via NDDB maps. Maps published in the Kent Conservation Commission's 2009 publication *Natural and Cultural Riches of Kent, CT* were consulted to identify designated agricultural soils, scenic ridgelines and horizon belts, archeological areas, and other features.

KLT also contracted with the Housatonic Valley Association (HVA) to produce customized GIS maps highlighting areas in Kent, CT, critical to enhancing climate resilience (see Figure 1 below). The HVA has developed a Riparian Buffer Model that enables conservation organizations to identify and prioritize areas most in need of protection. The maps delineate customized wetland and riparian buffer zones, highlighting areas that are the most critical to protecting water quality, providing flood protection and preserving critical habitats. Protected properties, forest cover, and surface water features are also shown. The maps thus provide a framework for systematically incorporating natural resource and climate-focused criteria into KLT's land acquisition and management strategy.

Ideal Riparian Buffer 25 ft., plus critical Zone 1: habitats, plus wetlands Zone 1 Buffer plus 100 ft., plus flood Zone 2: plains, plus steep slopes Aspetuck River Watershed Major Roads Local Roads Town Boundary River Stream Waterbody Parcel Boundary

Figure 1: HVA Riparian Buffer Model Map Excerpt with Key



Phase 3 entailed analyzing the HVA maps and other maps to identify and score potential conservation properties. The analysis did not consider parcels below 24 acres or those properties already benefitting from local, state, or federal protection. Most conservation attributes, including the presence of critical habitats and any surface water features, were read directly from relevant maps. The analysis also relied on a grid overlay to estimate the percentage of each property comprised of forest and falling within delineated wetland and riparian buffer zones. Attributes of potential conservation properties were entered into a spreadsheet and scored according to the system shown in Table 1 above. As a basis for comparison, 13 KLT fee properties were also evaluated.

4. Results

Sixty-four potential conservation properties in Kent, were analyzed and scored. The total scores and acreages for the top 20 properties are shown in Table 2 below, with full results Appendix 1. Scores ranged from 10-69 points, with a median score of 35 points. Not surprisingly, the very top of the scoring list features large properties; however, with the presence of various natural resource features accounting for 45% of a property's potential score, scores did not increase in a straight-line relationship with respect to size. The "Score/Size Ratio" in Table 2 highlights properties with relatively high conservation scores in comparison to size, leading to a larger ratio. The score vs. size relationship is useful in identifying smaller, likely more affordable parcels that still hold significant conservation value.

Table 2: Top-Scoring Potential Conservation Properties

	Total Score	Acreage	Score/Size Ratio
1	69	143.9	0.5
2	68.5	271.46	0.3
3	66.5	147.48	0.5
4	57.5	245.7	0.2
5	57	210.4	0.3
6	55	96.34	0.6
7	54.5	78.17	0.7
8	52	90.45	0.6
9	51.5	88.4	0.6
10	51.5	116.23	0.4
11	50	53.78	0.9
12	49	68.65	0.7
13	47.5	64	0.7
14	47.5	99.48	0.5
15	47.5	29.8	1.6
16	47.5	196.75	0.2
17	47	69.07	0.7
18	46.5	72.3	0.6
19	45	44.94	1.0
20	45	24.22	1.9



Among the 13 Kent Land Trust fee properties analyzed for comparison, property scores ranged from 11.5-76 points (see Table 3, with full results shown in Appendix 2). Interestingly, no remaining unprotected property in Kent scored as high as the highest scoring KLT fee properties. At the same time, several KLT properties already under protection earned low scores. Consistent with the data seen in Table 2 above, scores did not increase in a straight-line relationship with respect to size.

Table 3: Conservation Scores for Kent Land Trust Fee Properties

	Property Name	Total Score	Acreage
1	Skiff Mountain South Preserve	76	249.89
2	East Kent Hamlet Nature Preserve	74.5	262.6
3	Southern Gateway	74	242.45
4	Tobin Preserve	73.5	241.66
5	Kent Hollow Preserve	47	26.21
6	Avian Preserve	46.5	57.6
7	Bull Mountain Preserve	36.5	75
8	Beard Farm Preserve	34.5	40.02
9	Currie Sanctuary	27.5	62.26
10	Dobson Preserve	22.5	7.56
11	Geer Mountain Preserve	20	1.61
12	Alger Preserve	12.5	25.4
13	Duchacek	11.5	19.42

5. Conclusions

The data above suggest that in Kent, and likely elsewhere, properties are not created equal with respect to their conservation value. When viewed broadly, considering aesthetic, cultural, climate-resilience and other criteria, property conservation values range widely, from a low of 10 to a high of 76 out of a possible 100 points in this analysis. Conducting a thorough review of potential conservation properties should thus be a priority for land trusts and other conservation entities.

Another takeaway is that, when it comes to conservation value, size isn't everything. Relatively small properties featuring a diverse array of habitat types, and/or critical habitats, and/or important surface water features can outscore larger parcels. Finding the most worthy conservation property is not as simple as pointing to the biggest remaining open space, hence the importance of mapping resources that delineate features such as wetland and riparian buffer zones and critical habitats.

Looking back at past conservation efforts proved to be a useful exercise. In the case of the Kent Land Trust, historical selection criteria have resulted in protection of properties with both very high and very low calculated conservation values. Moving forward, KLT and others will have better tools to help maximize the value of conservation efforts.



6. Next Steps

For the Kent Land Trust, next steps will include presenting the findings of this study to key stakeholders, including members of the KLT Acquisitions Committee, with an eye toward adopting modified property selection and evaluation criteria. Ideally, the scoring system presented here will be a powerful tool both internally and externally. Committee members and property owners will know how environmentally valuable land is, and why, providing more incentive to protect it.

KLT will also share the findings of this study with local and regional conservation partners, including the Kent Conservation Commission and the Greenprint Collaborative, a nationally recognized Regional Conservation Partnership. An initial presentation to the Greenprint Collaborative Steering Committee occurred on June 10, 2016.

Another step is to reassess and refine KLT's land management strategy in light of the methods and findings of this study. Invasive species management, maintenance of early successional habitat, protection of vernal pools, and improvement of bird habitat have been points of emphasis for KLT. While each of these initiatives has likely contributed to climate resilience, KLT can more intentionally incorporate climate-focused management moving forward.

7. Questions

We hope that the analysis presented here is viable, useful, and transferable. We also are open to modifying and improving the model. To that end, our questions for CIRCA include:

- Does the model effectively incorporate relevant natural resource and climate-resilience criteria? What is missing? Should certain factors be more or less heavily weighted?
- Not all land can be preserved or otherwise protected. How can KLT and other conservation entities best promote low-impact development, flood control measures, and other climate-resilience initiatives?
- Are more and/or better mapping resources available? At what cost?
- What resources area available to help KLT manage protected land to provide better climate resilience?
- With whom should the report and/or the model be shared? Which other entities might benefit from adopting this or a similar approach for evaluating potential targets for conservation?



APPENDIX 1: Ranked Scores for Potential Conservation Properties Kent Land Trust

Kent L	and Trust				•					1				
Rank	Total Score	Acres	Size Score	Wetland Buffer (Zone 1)	Riparian Buffer (Zone 2)	Critical Hab.	cover	Surface water	Contig.	Ag. Value		Rec. Value	Secnic Ridge/ Horizon belt	Unique Features
1	69	143.9	10	4	10	0	5	5	5	5	15	5	5	
2	68.5	271.46	25	10	10	0	5	5	2.5	5	0		1	
3	66.5	147.48	10	4	10	0	5	5	2.5	5	15	10	0	
4	57.5	245.7	20	0	10	0	5		5	5	0		5	0
5	57	210.4	20	0	7	5	5	2.5	2.5	5	0		5	0
6	55	96.34	5	0	10	0	5	0	5	5	15	5	5	
7	54.5	78.17	5	0	7	5	2.5	5	5	5	15	0	5	0
8	52	90.45	5	7	10	0	2.5	2.5	5	5	15	0	0	
9	51.5	88.4	5	7	7	0	5	2.5	2.5	5	7.5	5	5	0
10	51.5	116.23	10	4	10	0	5	2.5	5	5	0		5	
11	50	53.78	5	0	10	0	5	5	0	5	15	5	0	
12	49	68.65	5	4	10	0	5	2.5	2.5	5	15	0	0	
13	47.5	64	5	10	10	0	2.5	2.5	2.5	0	15	0	0	0
14	47.5	99.48	5	0	10	0	2.5	2.5	2.5	5	7.5	5	5	
15	47.5	29.8	0	10	10	10	5	5	0	0	0		0	
16 17	47.5 47	196.75	15 5	0	10 7	0 5	5 5	5	2.5 5	0	0 15	5	5 5	0
18	46.5	69.07 72.3	5	4	10	0	5	5	2.5	5	0		5	0
19	46.5	44.94	0	10	10	0	0		2.5	5	7.5	0	5	
20	45	24.22	0	10	10	10	5	2.5	2.5	0	7.5		0	
21	45	62.21	5	10	10	0	5	2.5	0	5	0		5	2.5
22	45	58.39	5	10	10	0	5	2.5	2.5	5	0	0	5	0
23	44.5	38.47	0	10	7	10	5	5	2.5	0	0	5	0	
24	42.5	117.37	10	0	10	0	5	2.5	2.5	5	7.5	0	0	0
25	41.5	74	5	10	4	5	5	5	0	0	7.5	5	0	2.5
26	39.5	70.21	5	10	7	0	5	2.5	5	0	0	0	5	0
27	38.5	101.4	10	4	7	0	5	0	2.5	0	0		5	0
28	37	130	10	0	7	0	5	0	5	0	0		5	0
29	35.5	51.8	5	4	4	5	5	5	0	0	0		0	
30	35	32.8	0	0	10	0	2.5	2.5	2.5	5	7.5	0	5	0
31	35	38	0	0	10	0	5	2.5	2.5	0	7.5	5	0	
32	35	53.4	5	0	10	0	5	2.5	0	5	7.5	0	0	
33	34.5	92.27	5	10	7	0	0	2.5	0	5	0	5	0	
34	32.5	67.62	5	0	10	0	5	0	2.5	5	0	0	5	0
35	32	60.14	5	0	7	0	5	0	2.5	5	7.5	0	0	0
36	32	105.4	10	0	7	0	5	2.5	2.5	5	0	0	0	0
37	32	109	10	0	7	0	5	2.5	2.5	0	0	0	5	0
38	31.5	49.32	0	4	10	0	5	2.5	0	5	0	0	5	0
39	31	42.76	0	4	7	0	5	2.5	2.5	5	0	5	0	0
40	29.5	101.67	10	0	7	0	5	2.5	0	5	0	0	0	
41	28	91.32	5	4	4	0	5	2.5	2.5	5	0	0	0	0
42	27.5	41.17	0	0	10	0	5	5	2.5	5	0	0	0	
43	27.5	37.2	0	10	10	0	0		0	5	0		0	
44	27	41.4	0			0	5		2.5	5	0			
45	24.5	61.61	5	0	7	0	5		2.5	5	0			
46	22.5	40.88	0	0		0			0		0			
47	22.5	49.1	0	0	10	0	5		0					
48	22.5	41.33	0	0	10	0	5		0				5	
49	22.5	24.9	0	0	10	0	5		2.5	0			0	
50	22	38	0	0	7	0	5		2.5	0	0		0	
51	21.5	52.6	5	0		0	5		2.5	0				
52	21.5	78.66	5	0						0				
53	19.5	45.19	0			0	5		5					
54	19.5	39.36	0			0			2.5	5				
55	19	70	5	0	4	0	5	0	5				0	
56	18.5	30	0		7	0	2.5	2.5	2.5	0			0	
57	17.5	29.11	0		0		2.5	0	2.5	5	7.5	0	0	
58	17.5	38	0	0	0	0	5		2.5	5	0		5	
59	16.5	37.07	0	0	4	0	5		2.5	5	0		0	
60		29.64	0	0	0	0	5		2.5	0		0	0	
61 62	15	53	5	0	0	0	5		0		0		5	
63	15	40.16	0				5 5			5	0		5 5	
	12.5	26.69												
64	12.5	39	0	0	0	0	5	0	2.5	0	0	0	5	0



APPENDIX 2: Ranked Scores for Kent Land Trust Fee Properties Kent Land Trust

				Wetland	Riparian						Town		Secnic Ridge/	
	Total		Size	Buffer	Buffer	Critical	Forest	Surface		Ag.	Char.	Rec.	Horizon	Unique
Property Name	Score	Acres	Score	(Zone 1)	(Zone 2)	Hab.	cover	water	Contig.	Value	Area	Value	belt	Features
Skiff Mountain														
South Preserve	76	249.9	20	4	7	5	5	2.5	5	5	7.5	10	5	0
East Kent Hamlet														
Nature Preserve *	74.5	262.6	25	0	7	0	5	5	2.5	0	15	10	0	5
Southern Gateway	74	242.5	20	0	4	5	5	2.5	2.5	5	15	10	0	5
Tobin Preserve *	73.5	241.7	20	4	7	0	5	5	5	0	7.5	10	5	5
Kent Hollow														
Preserve	47	26.21	0	10	7	0	0	2.5	2.5	5	15	5	0	0
Avian Preserve	46.5	57.6	5	0	4	5	5	5	5	5	0	10	0	2.5
Bull Mountain														
Preserve	36.5	75	5	0	4	0	5	0	2.5	0	0	10	5	5
Beard Farm														
Preserve	34.5	40.02	0	10	7	5	0	2.5	0	5	0	5	0	0
Currie Sanctuary	27.5	62.26	5	0	10	0	5	0	2.5	0	0	5	0	0
Dobson Preserve	22.5	7.56	0	0	10	0	5	0	2.5	5	0	0	0	0
Geer Mountain														
Preserve	20	1.61	0	0	0	0	5	0	0	0	15	0	0	0
Alger Preserve	12.5	25.4	0	0	0	0	5	0	2.5	0	0	5	0	0
Duchacek	11.5	19.42	0	0	4	0	5	0	2.5	0	0	0	0	0

^{*} Only the Kent portions of EKHNP and Tobin Preserves were evaluated for buffer zones and critical habitats.