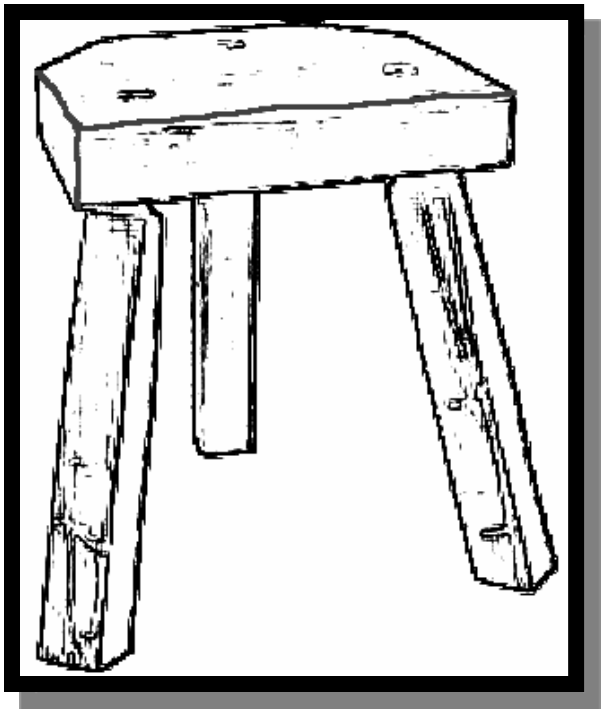
Off Highway Vehicle Siting Criteria

Fine Filter Analysis

dcr

Off-Highway Vehicles Siting Criteria

- Coarse Filter
  - 8 criteria
- Fine Filter
  - 20 Environmental and Resource Protection Criteria
  - 10 Trail and Facility Design Criteria
  - 3 Trail and Facility Operations and Management Criteria



Optimal OHV Trail Siting Criteria

1. **Complies with MESA**
2. **Avoids known locations of state listed endangered species, threatened species, species of special concern (from NHESP)**
3. **Does not impact Priority Natural Communities and Vernal Pools (from NHESP)**
4. **Does not impact Core Habitat**
5. **Complies with approved species management plans**
6. **Complies with Watershed Protection Act**
7. **Complies with DEP wellhead protection**
8. **Complies with Wetland Protection Act (mask out open water)**
9. **Complies with Zone 1 of DCR Land Stewardship Zoning (in development)**
10. **Complies with DCR regulations for Forest Reserves**
11. Does not impact ACECs
12. Complies with regulations for Wildlands
13. **Not located on dams, dikes or spillways**
14. **Locate trails on existing development**

dcr

Criteria (Continued)

15. **Avoids restricted soil types**

16. **Avoids trail grades > 30%**

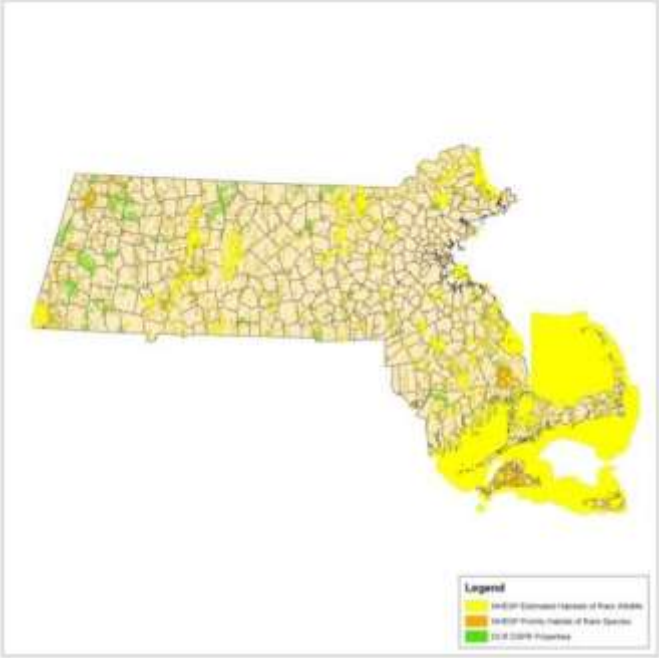
17. **Avoids impacting unique geological features (not available)**

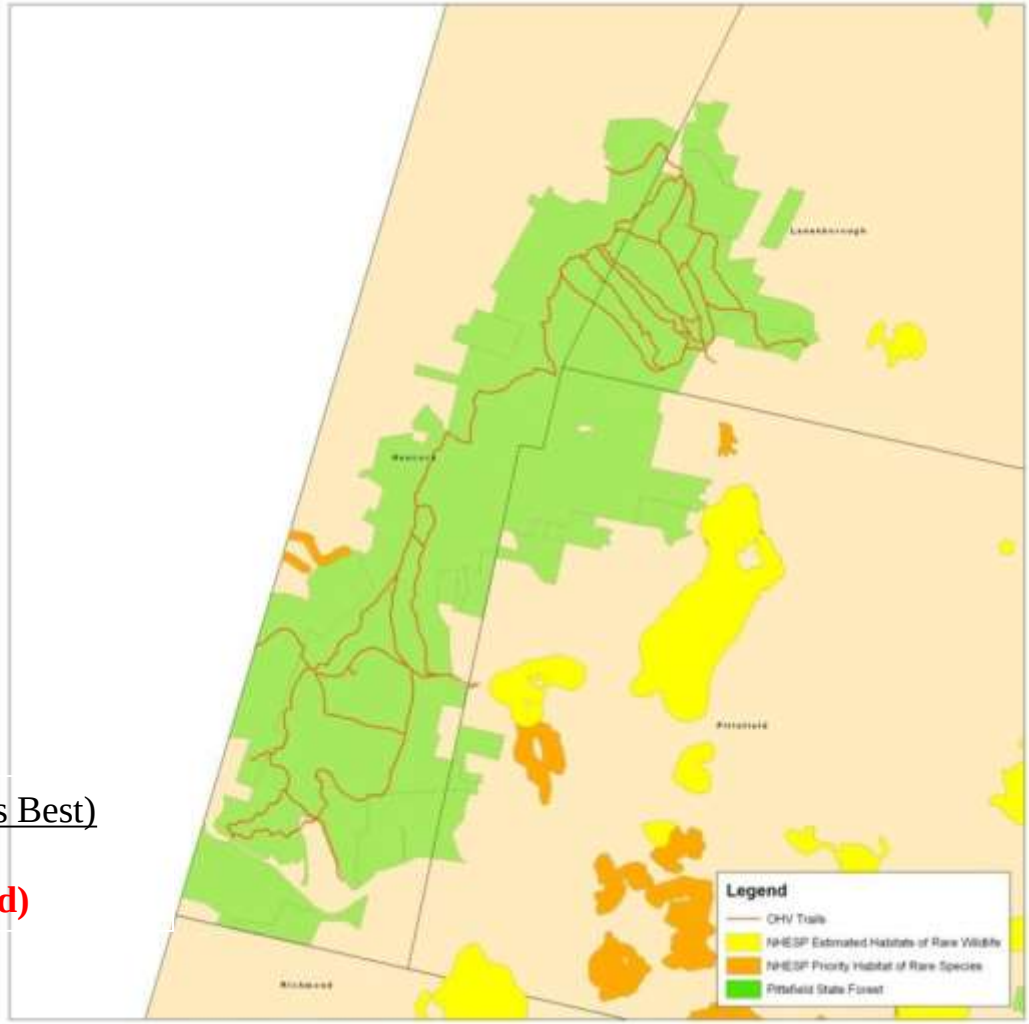
18. **Avoids impacting cultural and historic resources, remove wetlands from analysis**

19. **Avoids impacting trails of national, state or regional significance that are identified in the MA Greenway Plan**

20. **OHV Facility Management Plan includes a monitoring and response system (not available)**

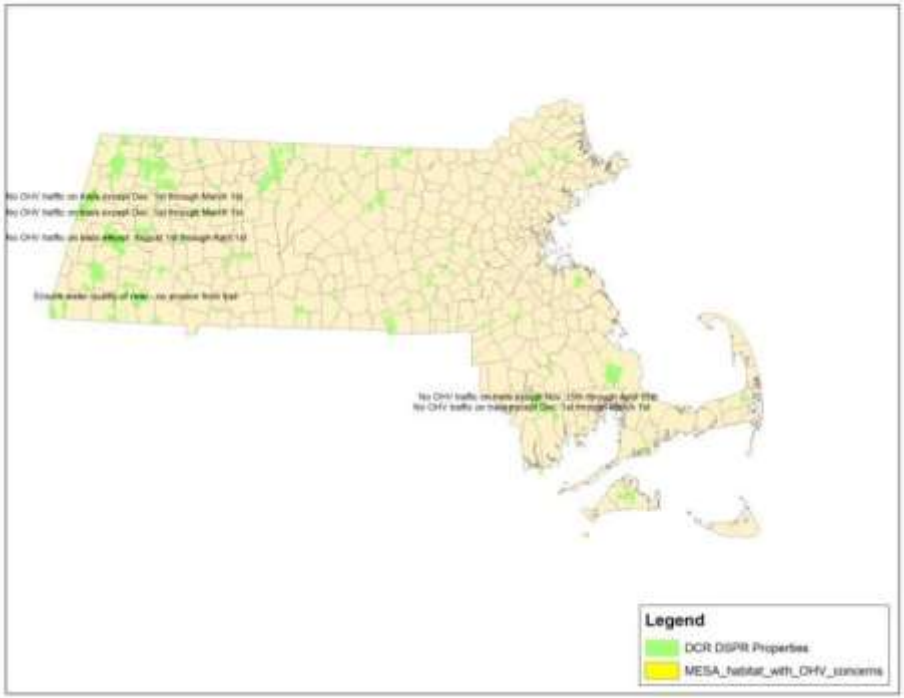
1) The proposed trail layout is in compliance with the Massachusetts Endangered Species Act (MESA) and applicable regulations (321 CMR 10)

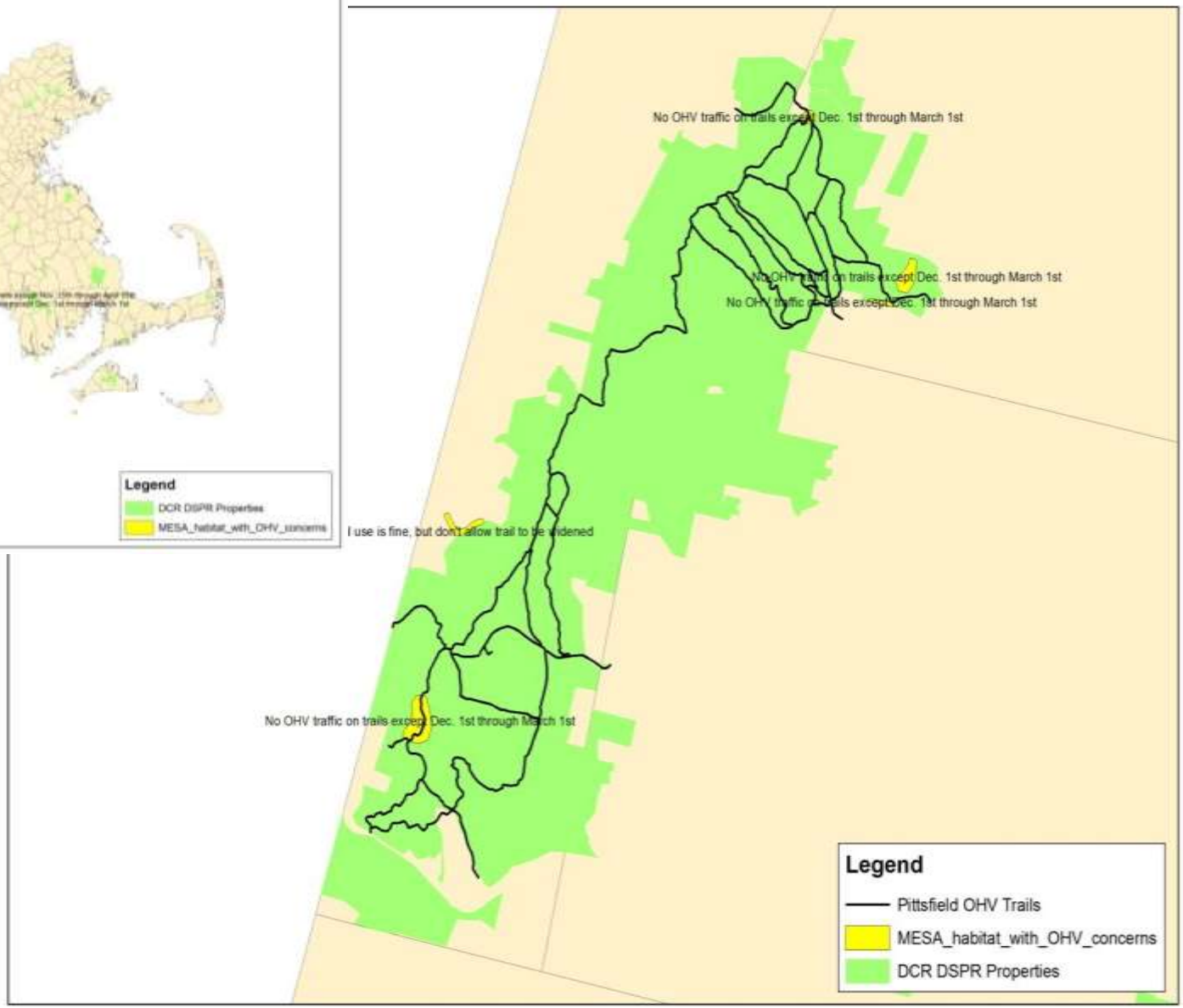




<u>Model Values (2 is Poor for OHV Trails, 1 is Fair, 0 is Best)</u>
In/out **<u>either</u>** Estimated Habitat or Priority Habitat……2/0 **(changed)**

2) The proposed trail layout avoids known locations of state listed endangered species, threatened species, species of special concern or their habitat, as specified on a site specific basis by the Natural Heritage and Endangered Species Program

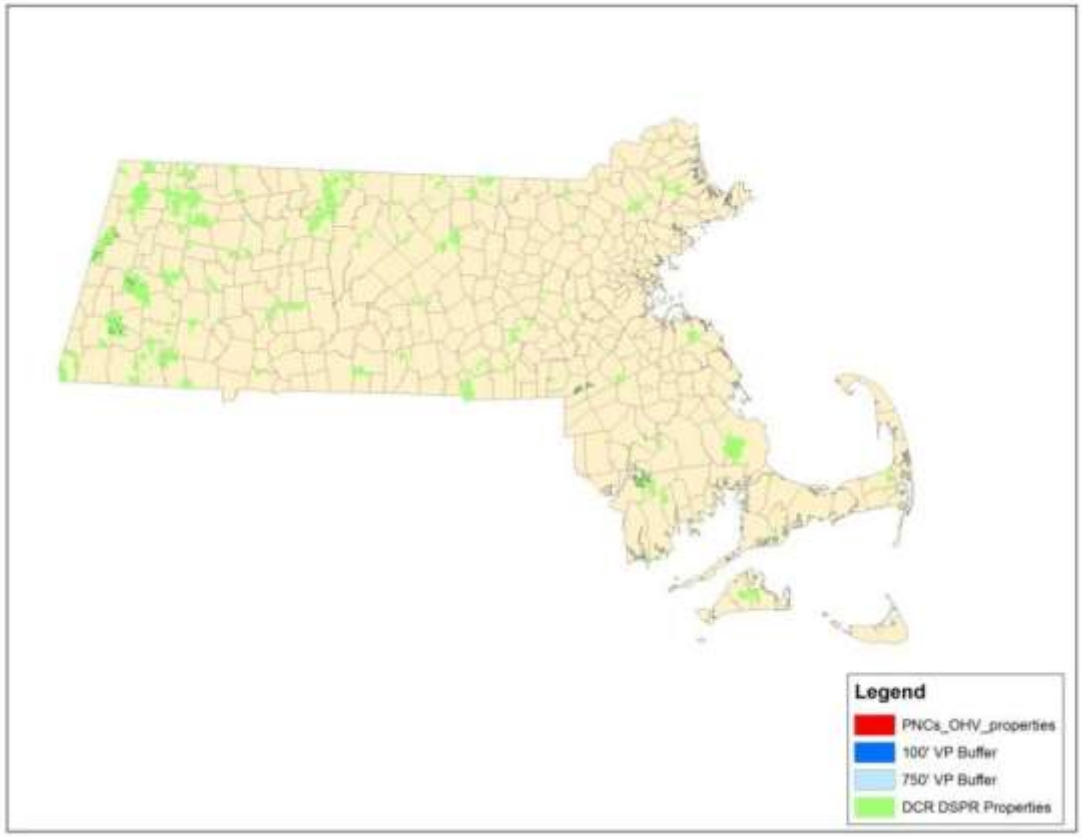


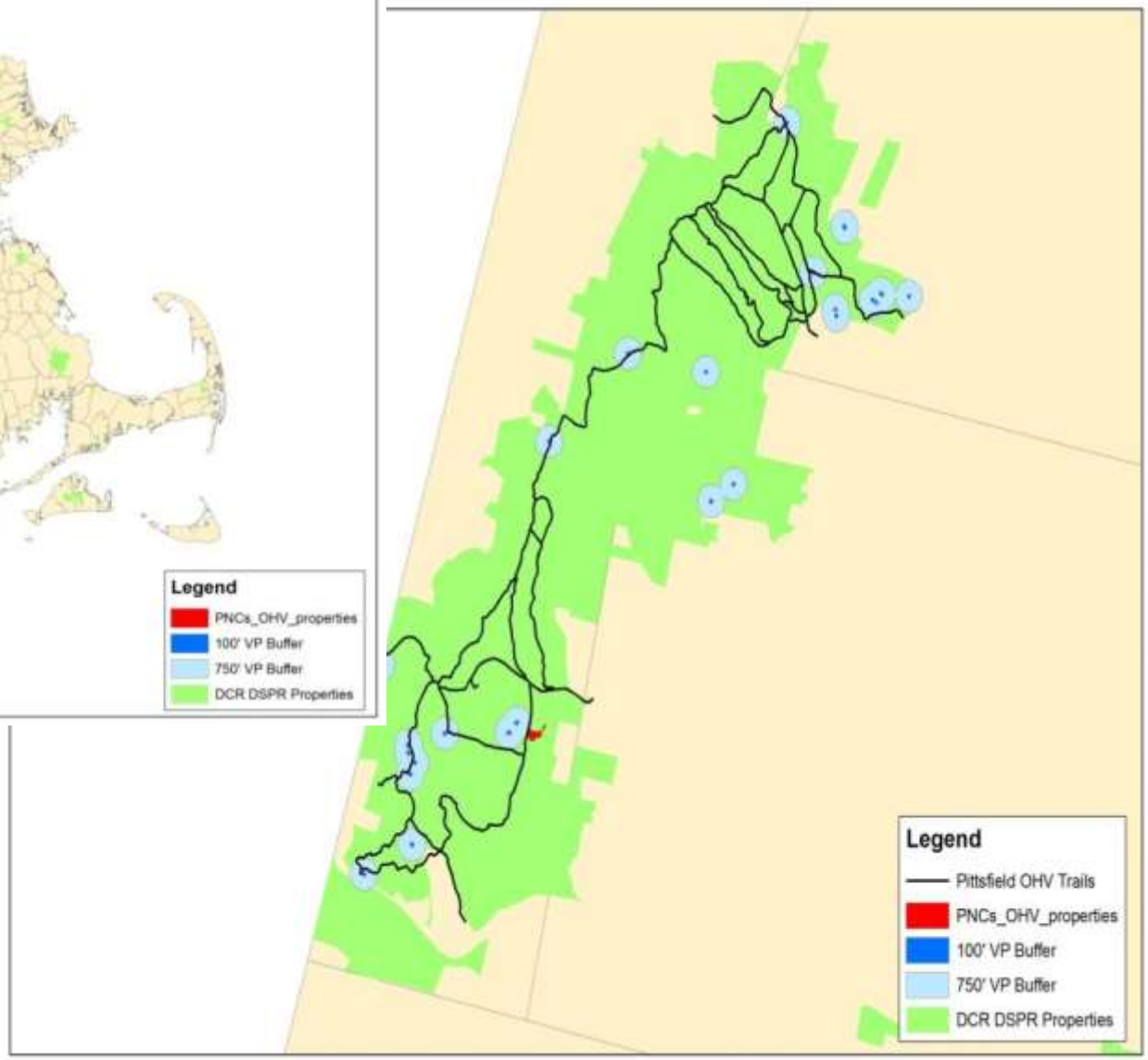


<u>Model Values (2 is Poor for OHV Trails, 1 is Fair, 0 is Best)</u>

In/out Habitat with Rare Species concern…mask/0 **(changed)**

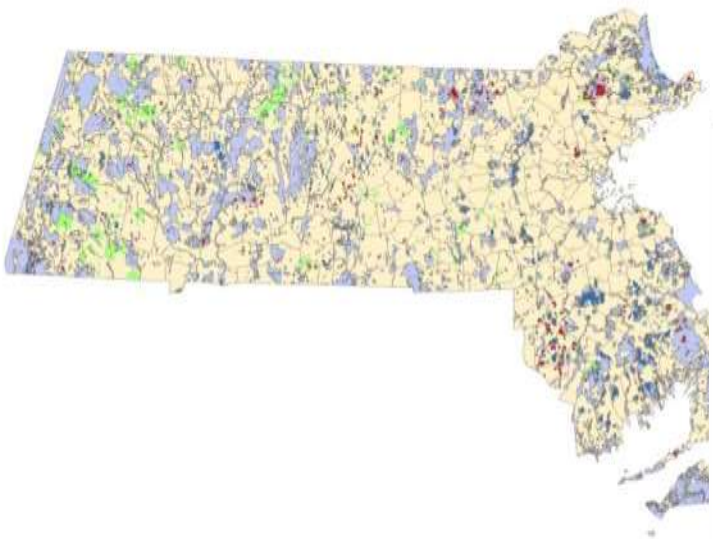
3) The proposed trail layout does not negatively impact Priority Natural Communities and vernal pools as identified and mapped by Massachusetts Natural Heritage and Endangered Species Program (MNHESP). Degrees of impacts shall be determined by DCR in consultation with MNHESP



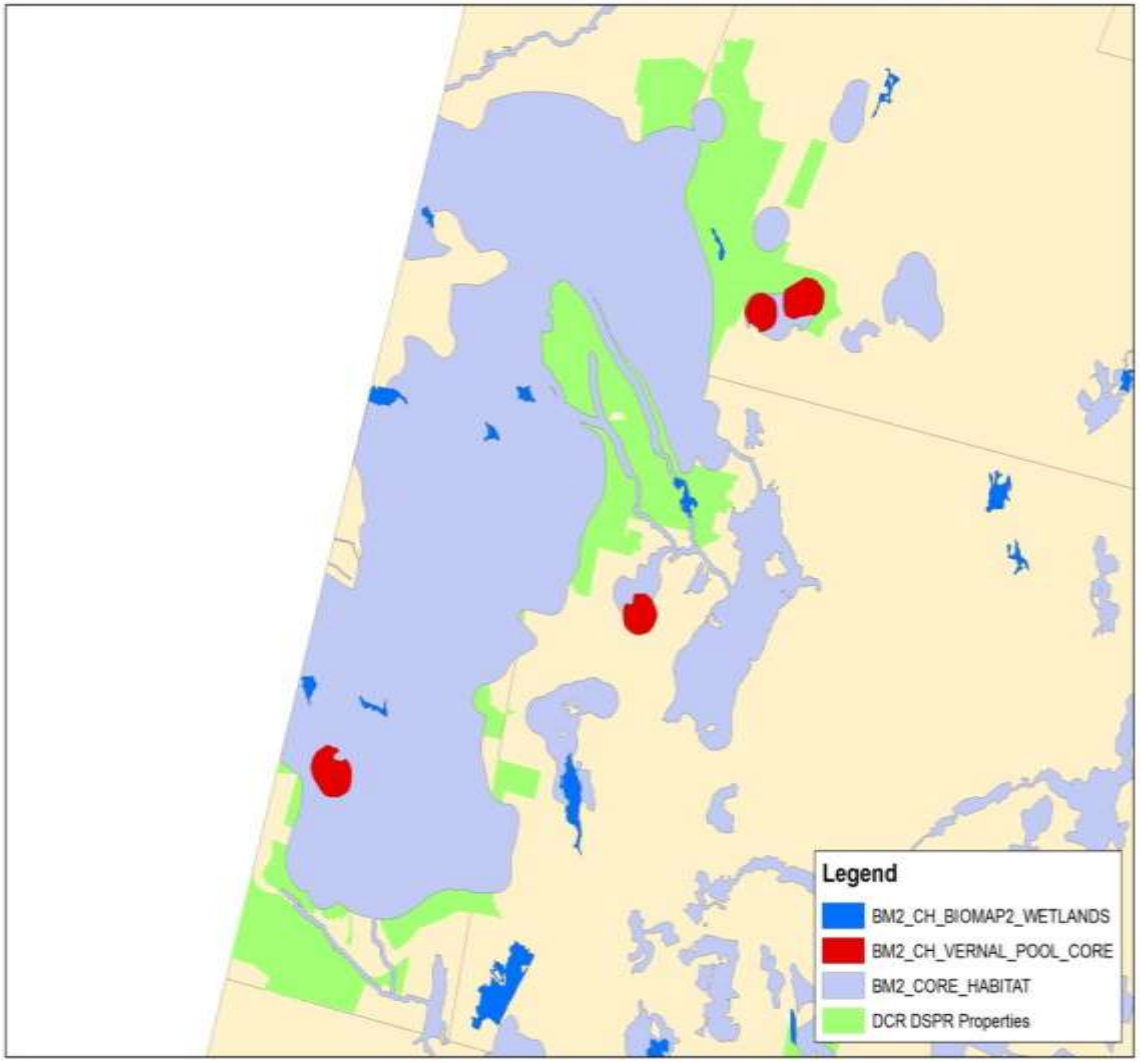


<u>Model Values (2 is Poor for OHV Trails, 1 is Fair, 0 is Best)</u>
In/out Vernal Pool 100'/750' Buffer…mask/1/0 **(changed)**
In/out Priority Natural Communities……mask/0 **(changed)**

4) The proposed trail layout does not negatively impact Core Habitat as determined by DCR in consultation with MNHESP



Core habitat (from BioMap2) are areas necessary to promote the persistence of state listed species, exemplary natural communities and intact ecosystems



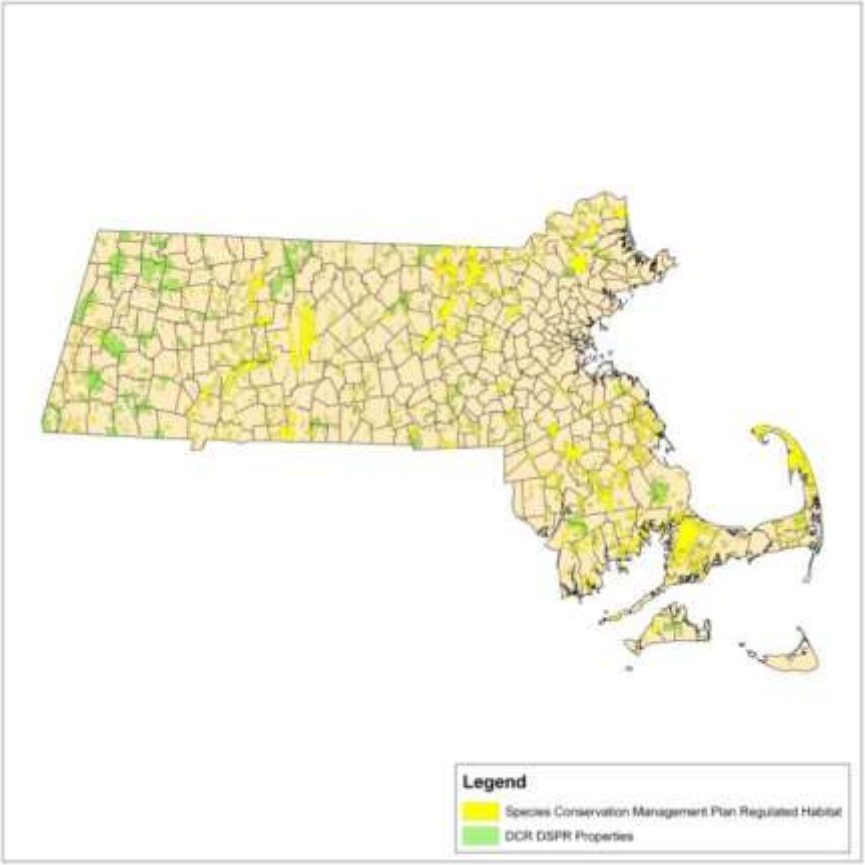
<u>Model Values (2 is Poor for OHV Trails, 1 is Fair, 0 is Best)</u>

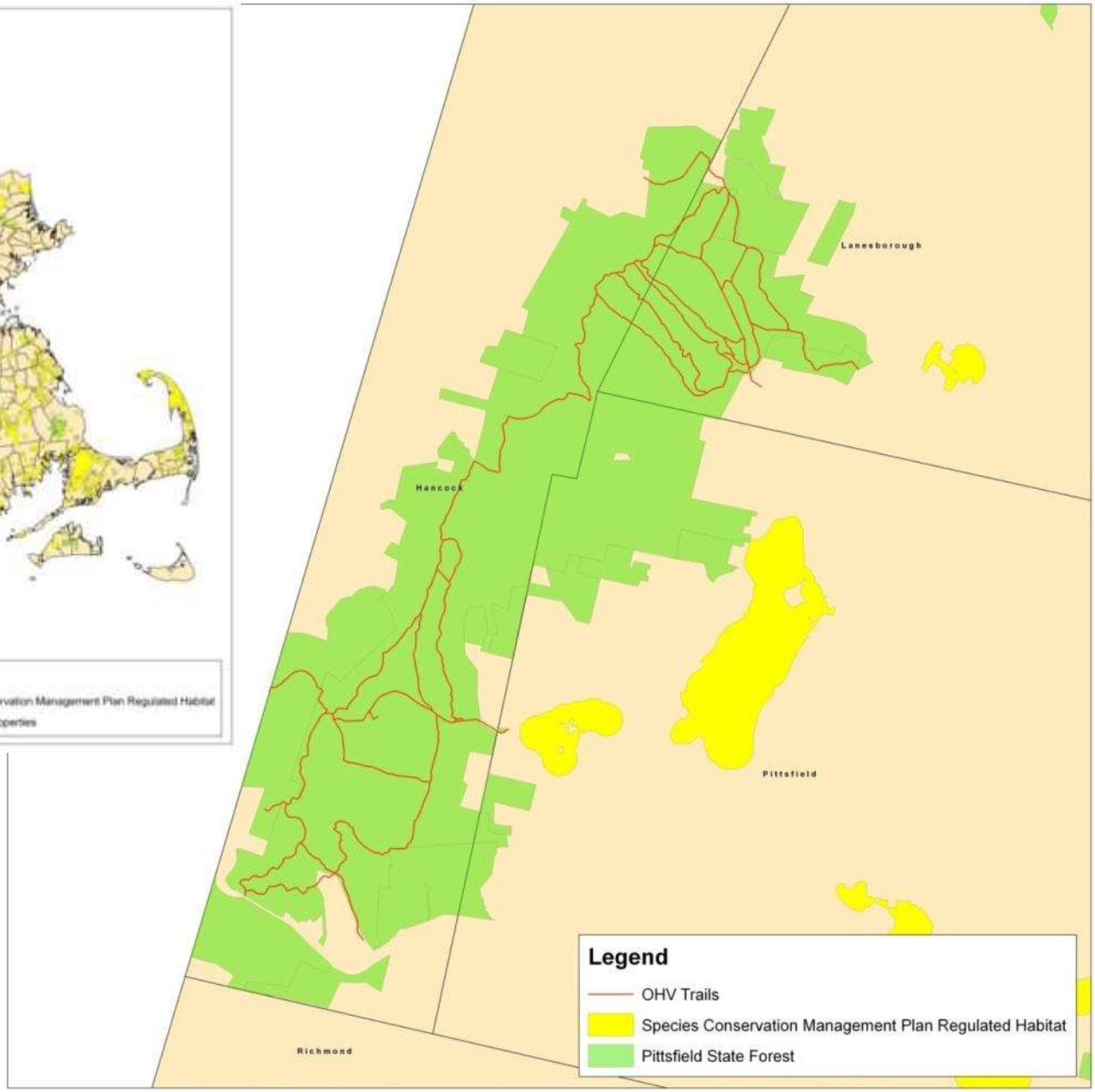
In/out BioMap2 Core Habitat……1/0

In/out BioMap2 Vernal Pool Core Hab… mask/0 **(added)**

In/out BioMap2 Core Wetland Habitat.…1/0 **(added)**

5) The proposed trail layout is in compliance with approved species management conservation plans

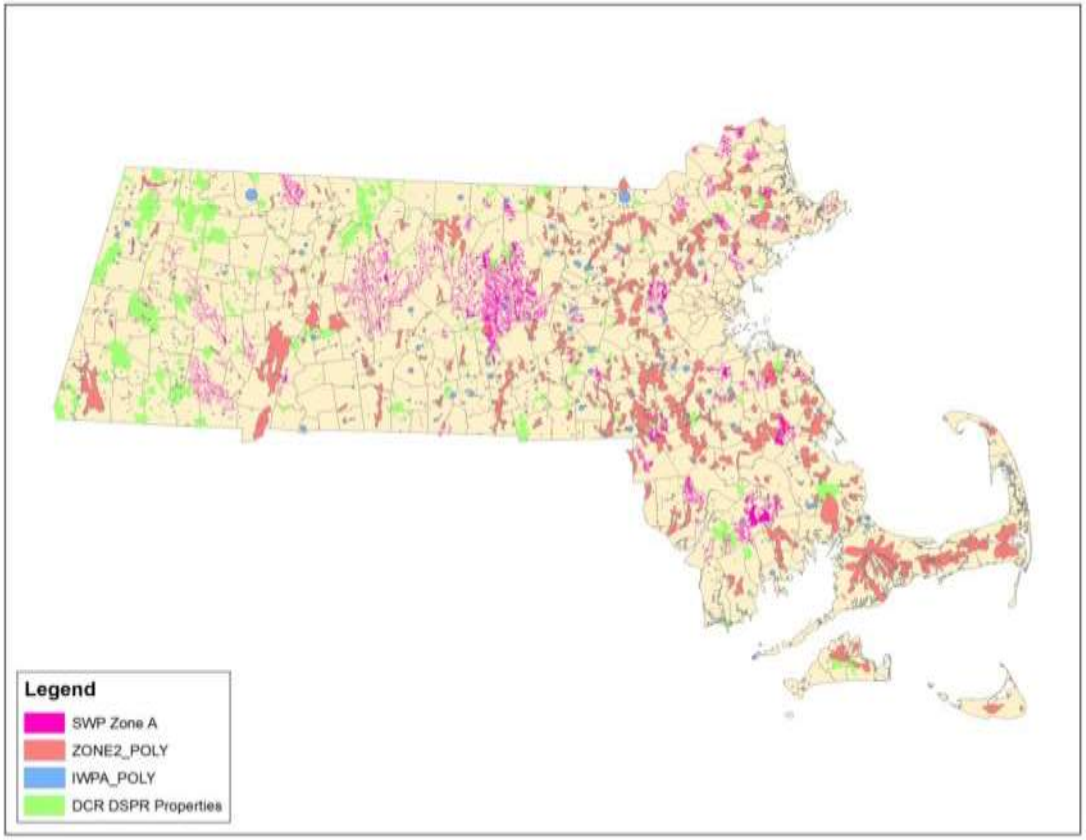


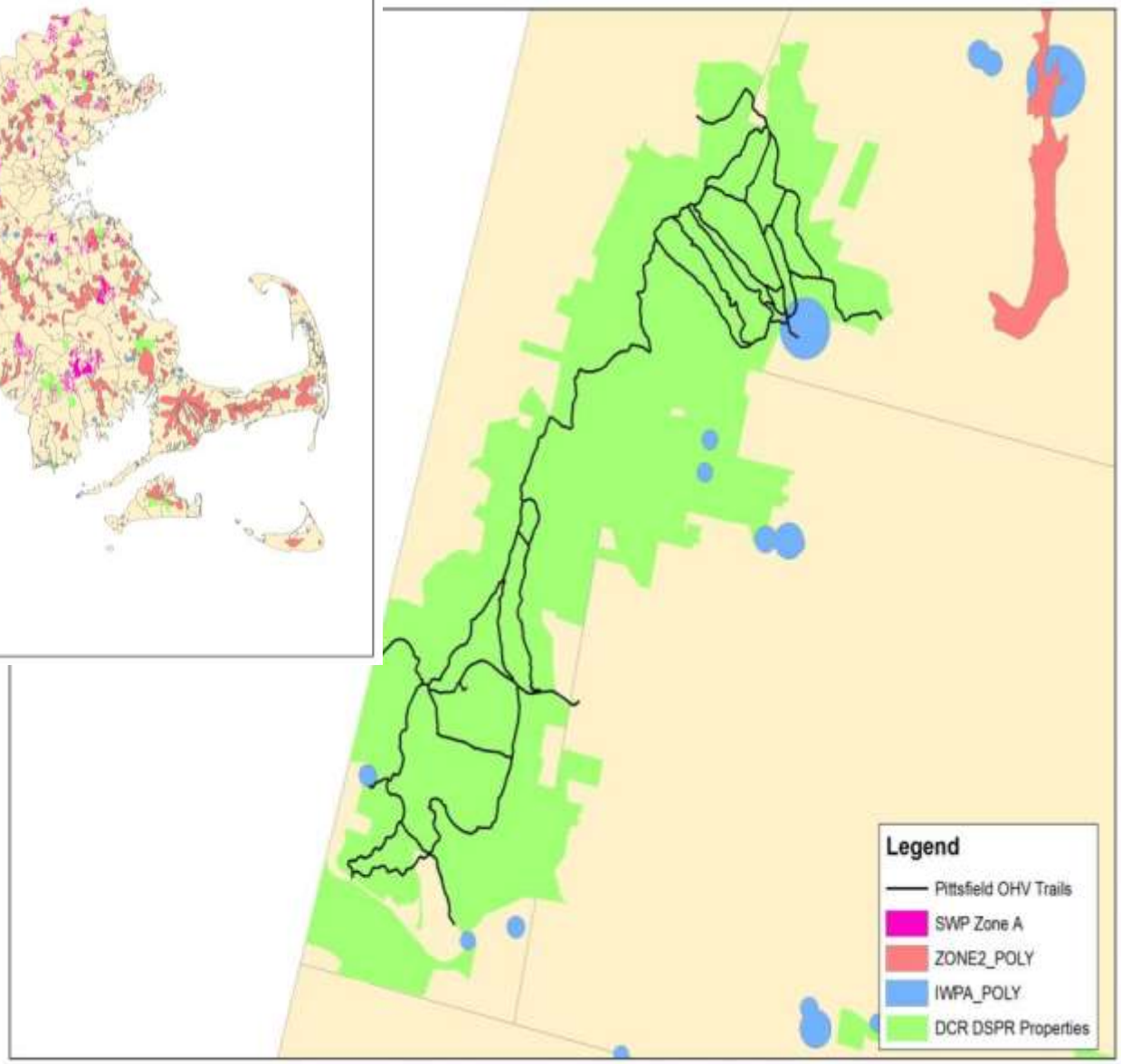


<u>Model Values (2 is Poor for OHV Trails, 1 is Fair, 0 is Best)</u>

In/out Species Mgmt Conservation Plan……..1/0

7) The proposed trail layout complies with Massachusetts regulations and policies for the protection of wellheads as determined by the Department of Environmental Protection





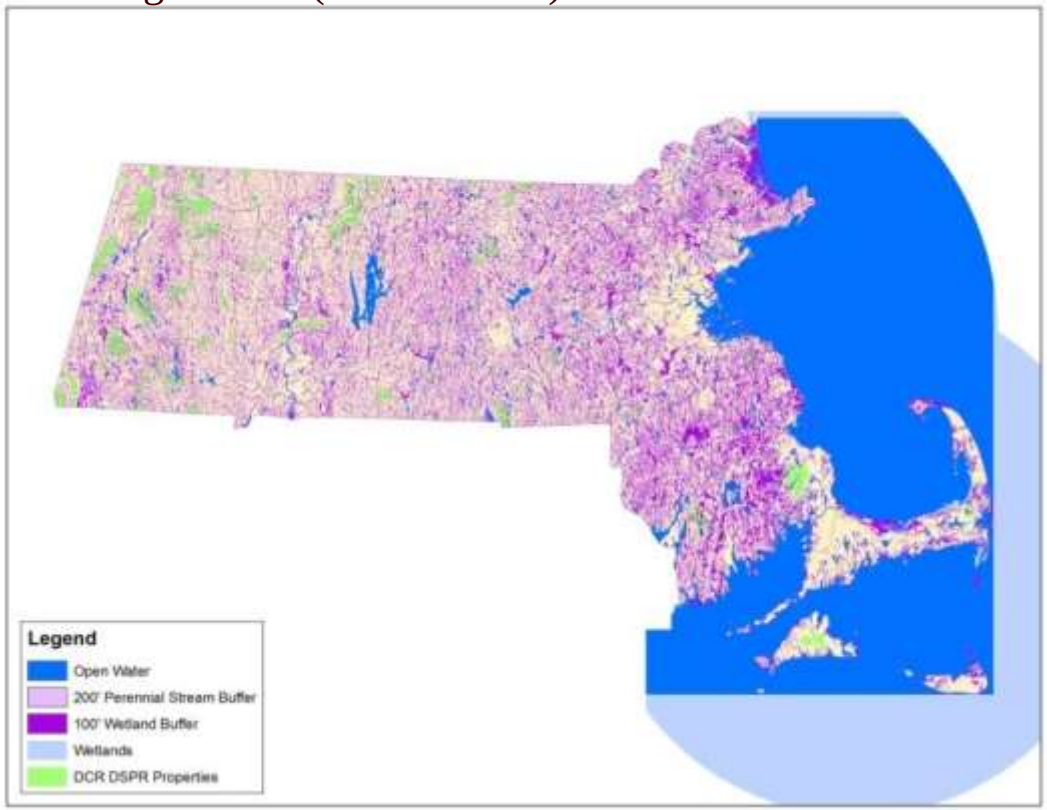
<u>Model Values (2 is Poor for OHV Trails, 1 is Fair, 0 is Best)</u>

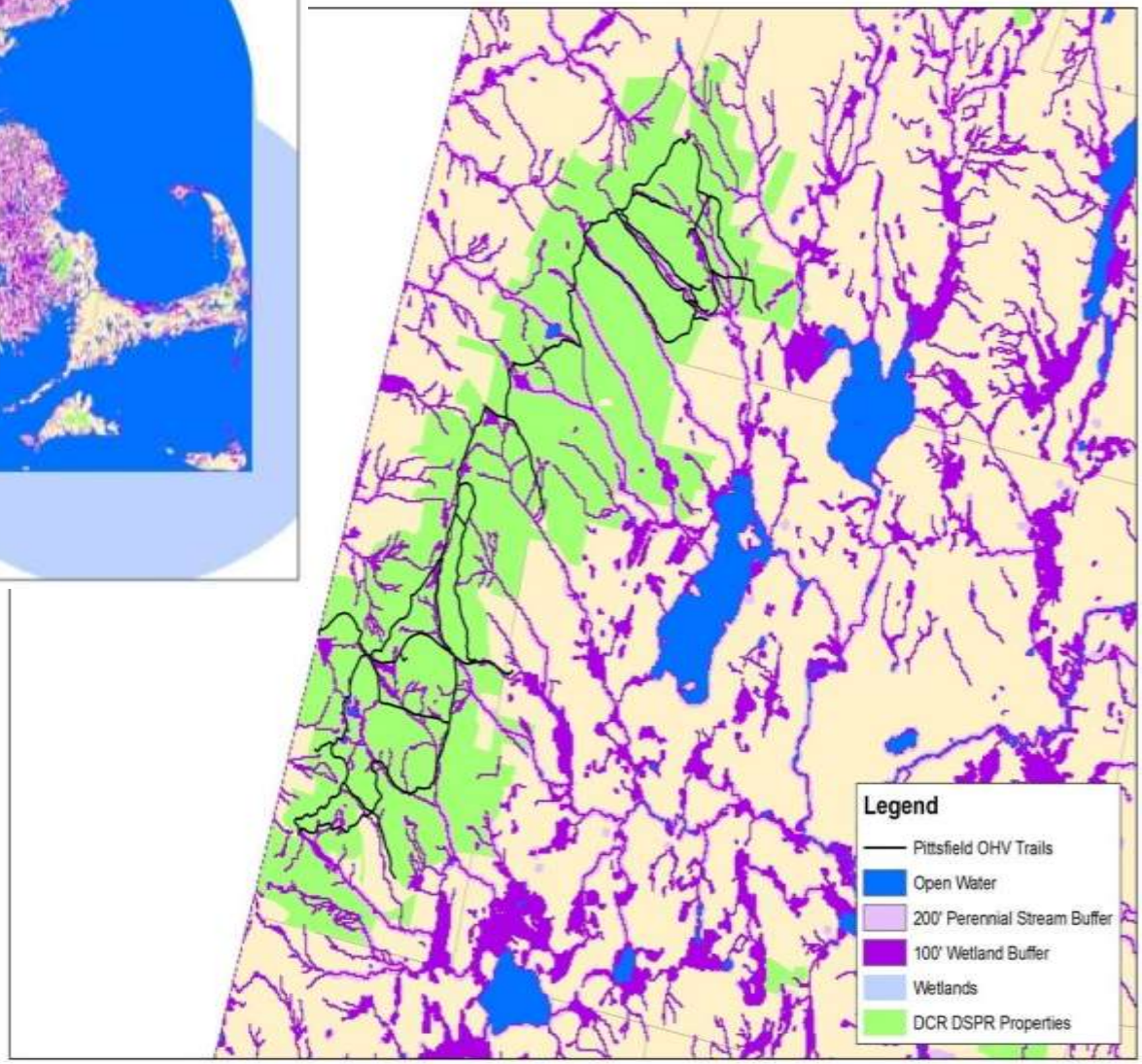
In/out Wellhead Protection Zone 2…1/0

In/out Interim Wellhead Prot. Zone…….mask/0 **(added)**

In/out Surface Water Prot. Zone..2/0 **(added)**

8) The proposed trail layout is in compliance with the Wetlands Protection Act and applicable regulations (310 CMR 10)





<u>Model Values (2 is Poor for OHV Trails, 1 is Fair, 0 is Best)</u>

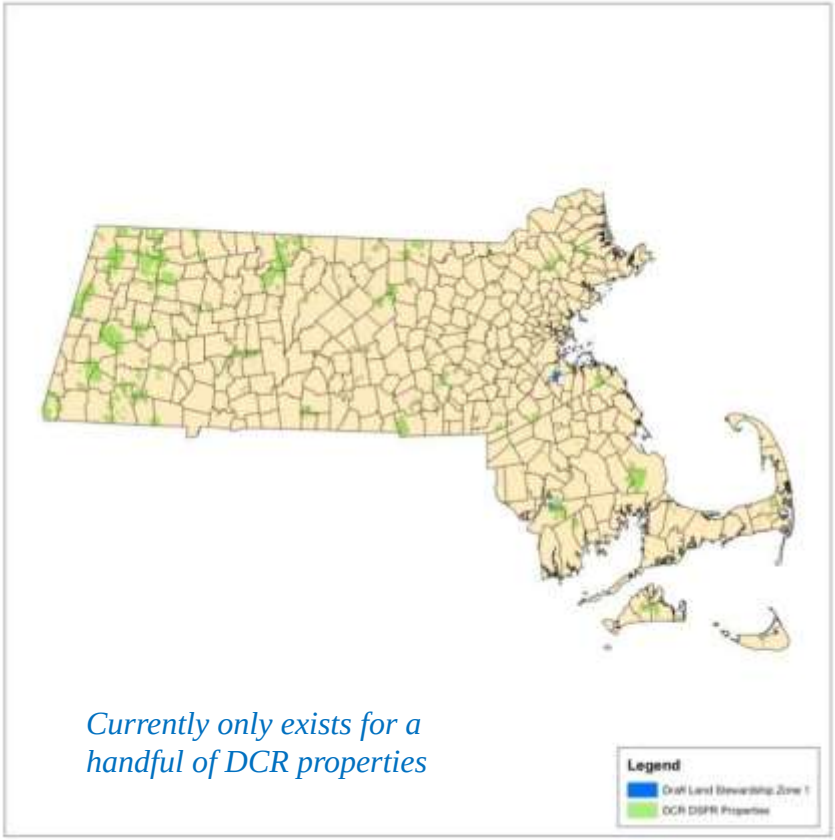
In/out Wetlands…..……2/0 (**added**)

In/out 100' Wetland Buffer…….1/0

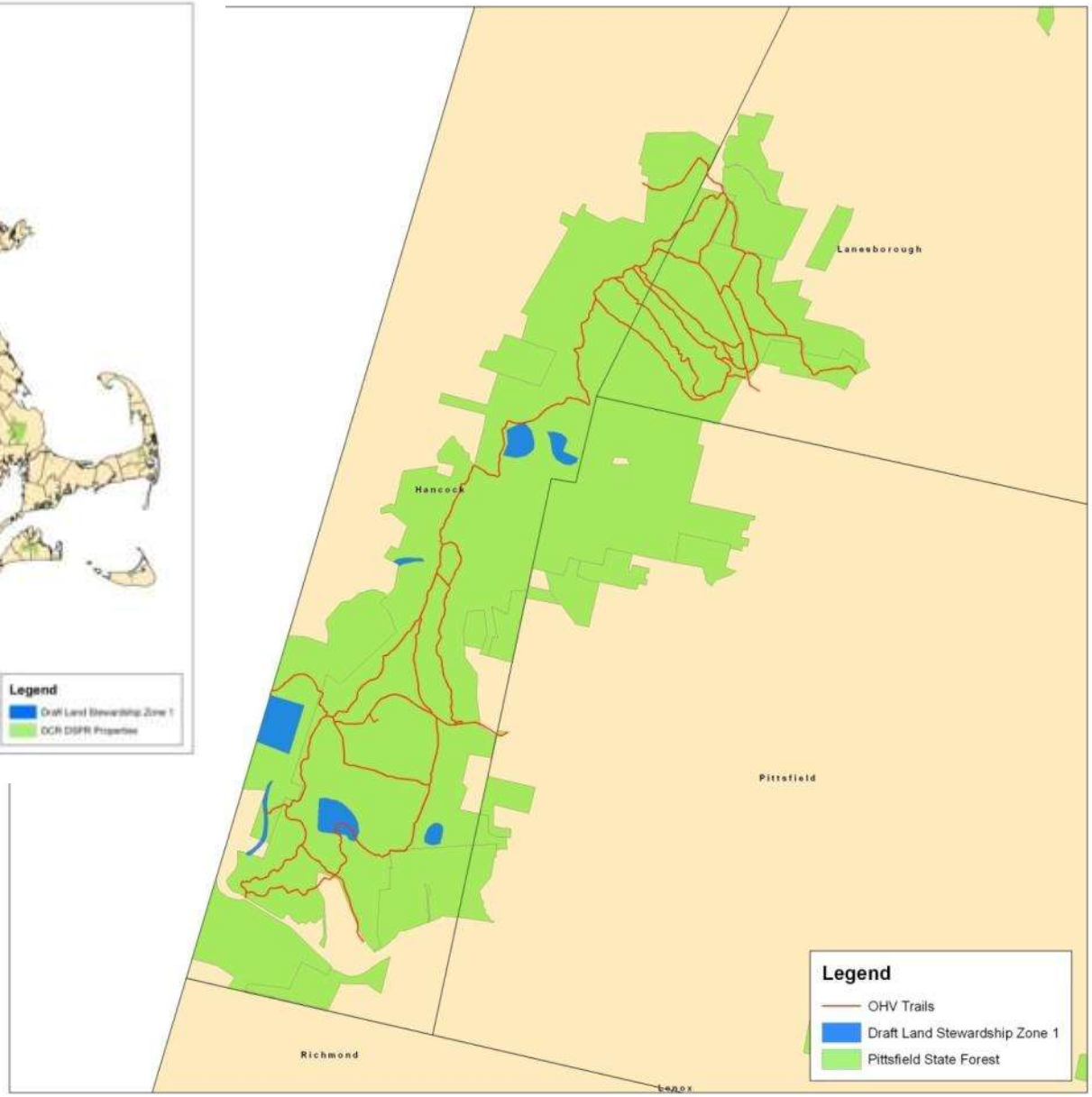
In/out 200' Perennial Stream Buffer……..…..1/0 (**added**)

In/out Open Water……..mask/0 **(added)**

9) The proposed trail layout complies with DCR regulations and policies for the protection of areas classified as Zone 1 under DCR's Land Stewardship Zoning



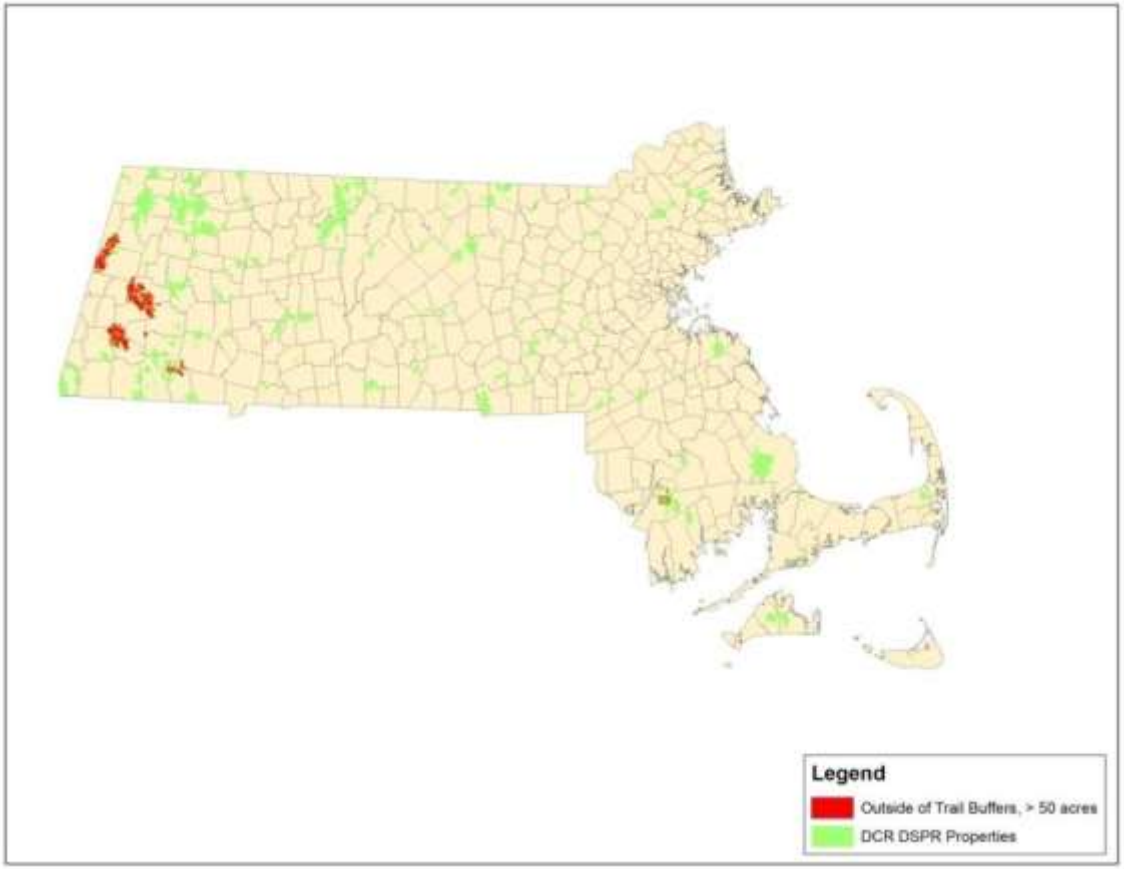
Currently only exists for a handful of DCR properties

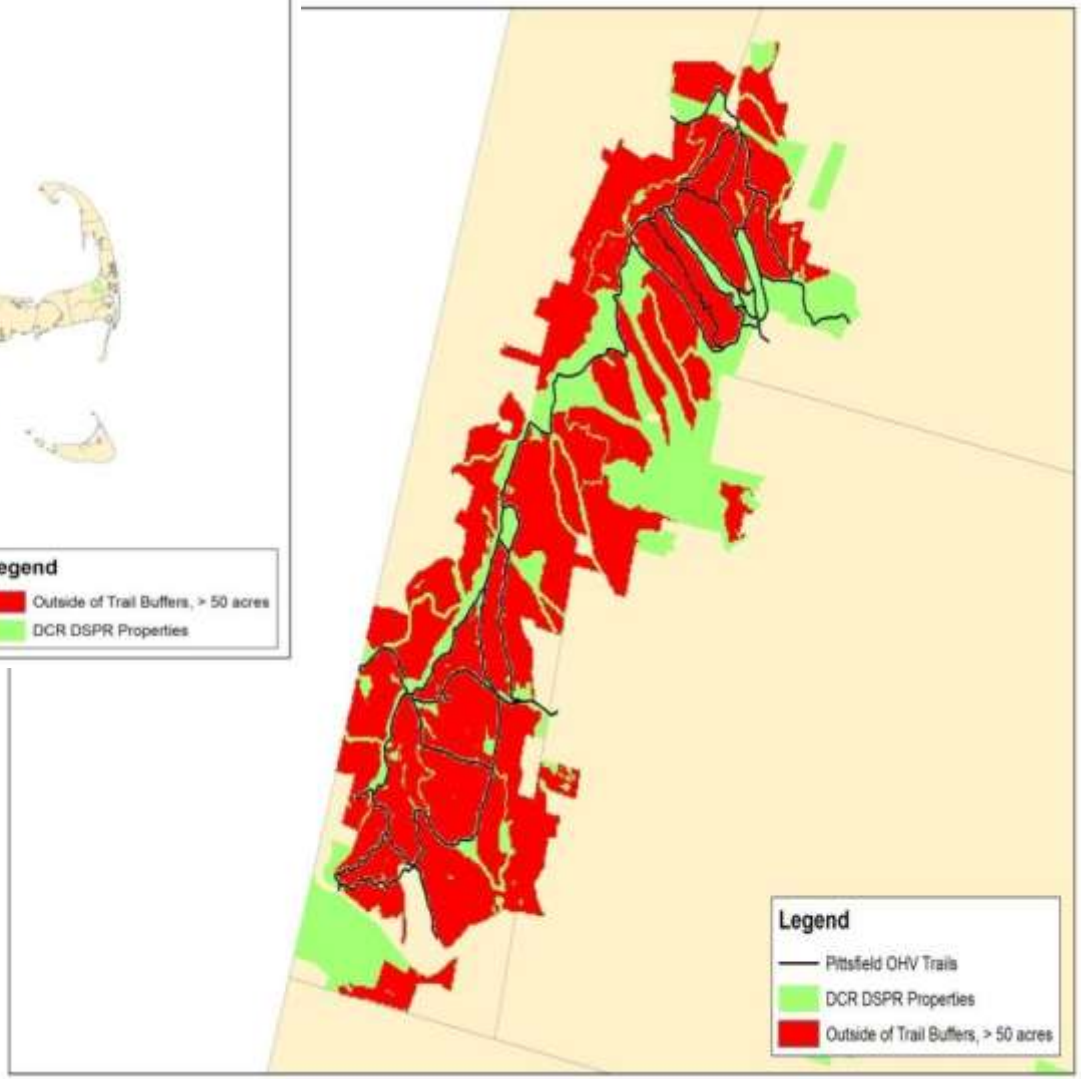


<u>Model Values (2 is Poor for OHV Trails, 1 is Fair, 0 is Best)</u>

In/out Zone 1……..2/0

14) The proposed trail layout minimizes further fragmentation of blocks of forestland by locating trails on areas with existing development whenever possible

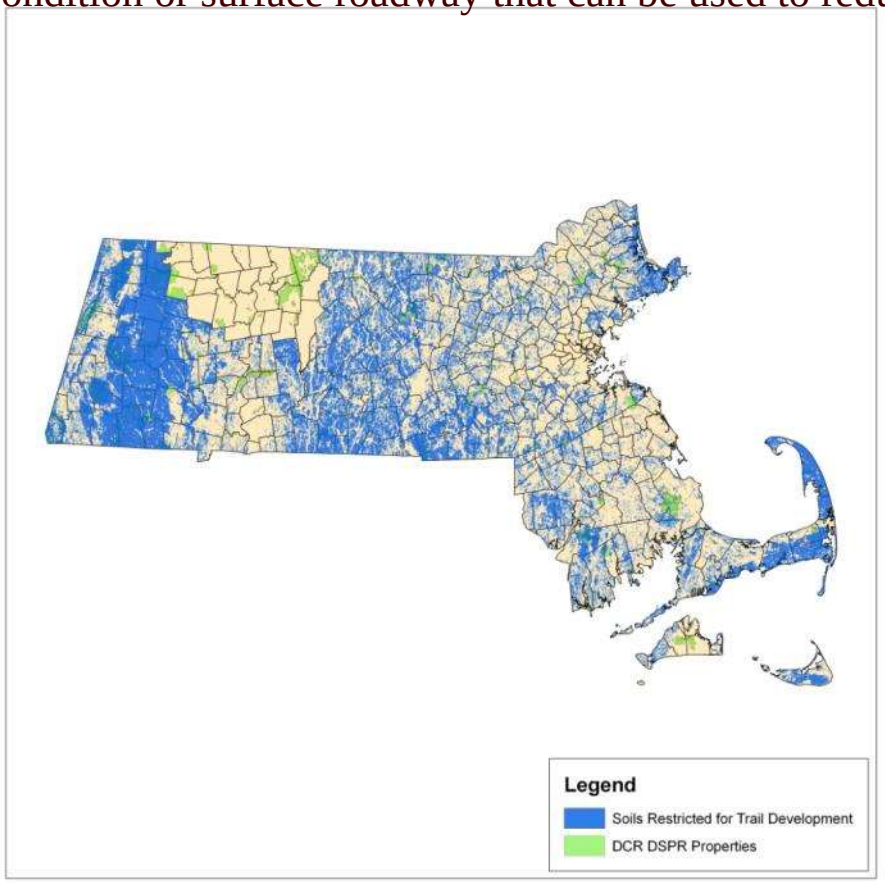


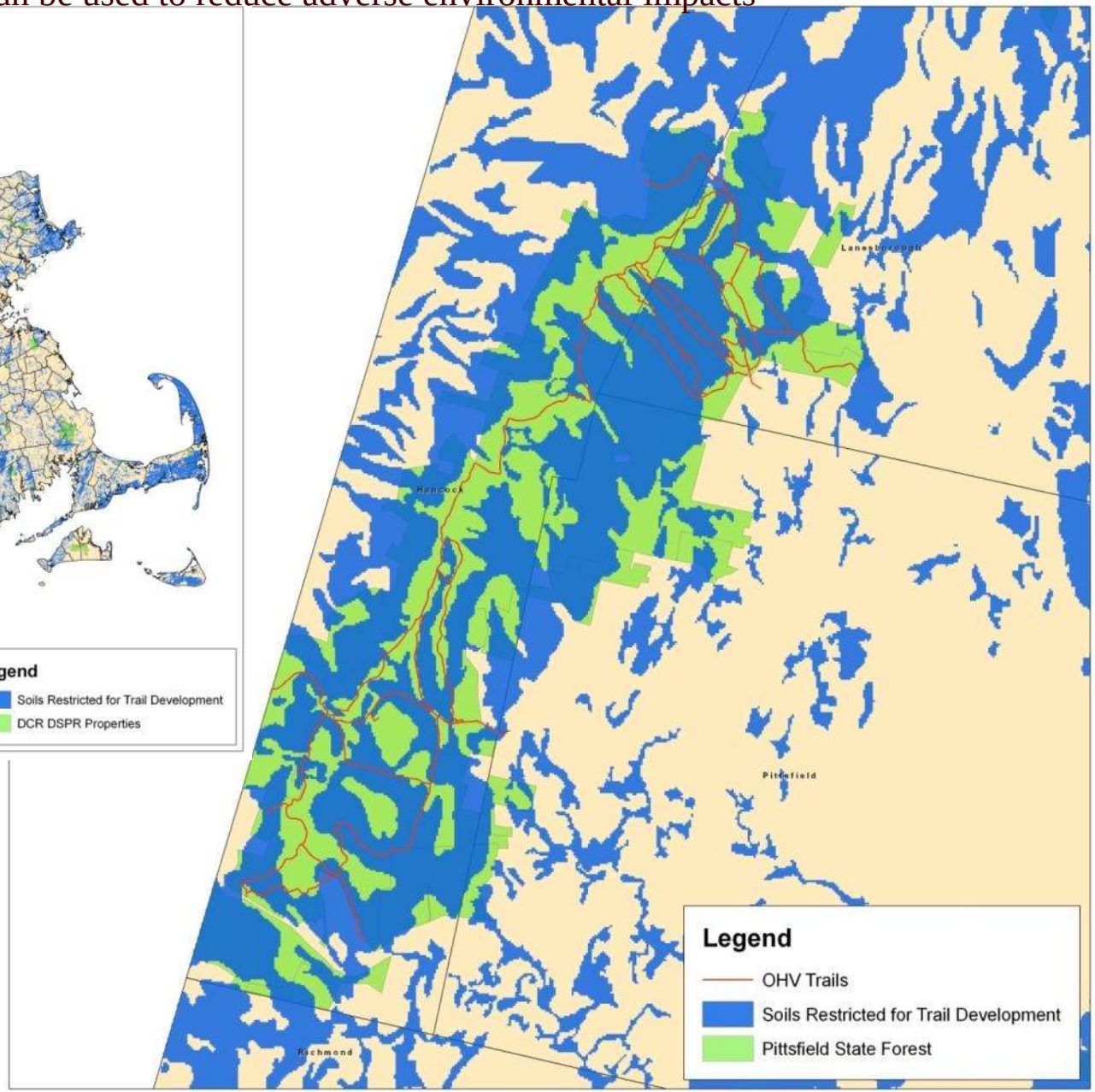


<u>Model Values (2 is Poor for OHV Trails, 1 is Fair, 0 is Best)</u>

In/out Trail Buffers on Forest Polys > 50 acres…….2/0 **(changed)**

15) The proposed trail layout avoids areas having soil types identified as restricted for trail or road development as defined by the Natural Resources Conservation Service, unless there is an existing soil condition or surface roadway that can be used to reduce adverse environmental impacts

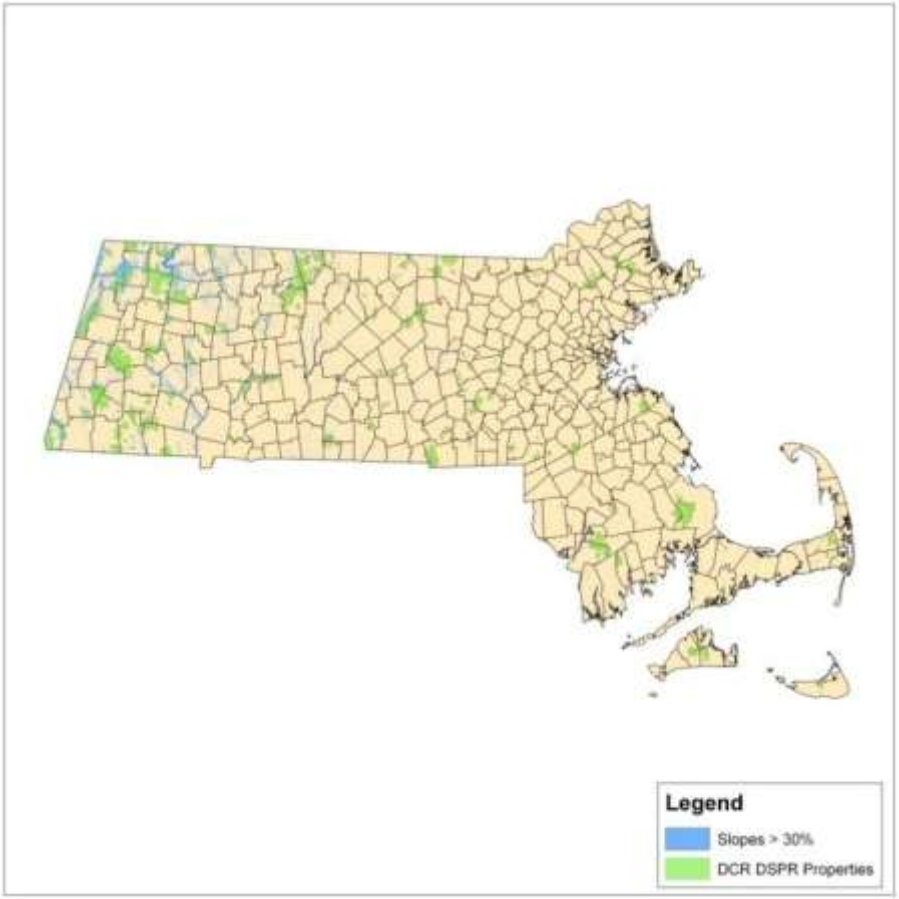


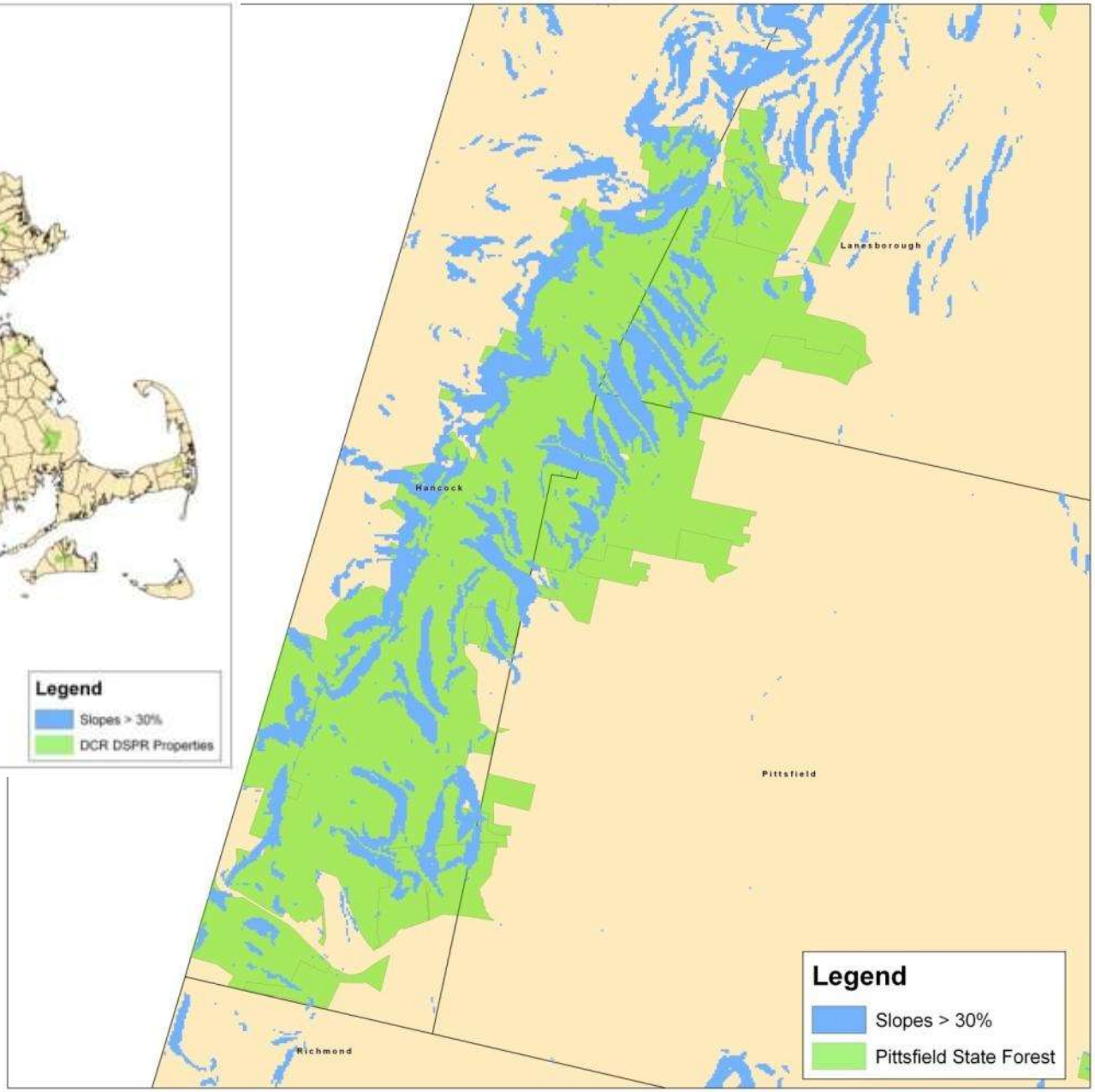


<u>Model Values (2 is Poor for OHV Trails, 1 is Fair, 0 is Best)</u>

In/out Restricted Soils……..2/0

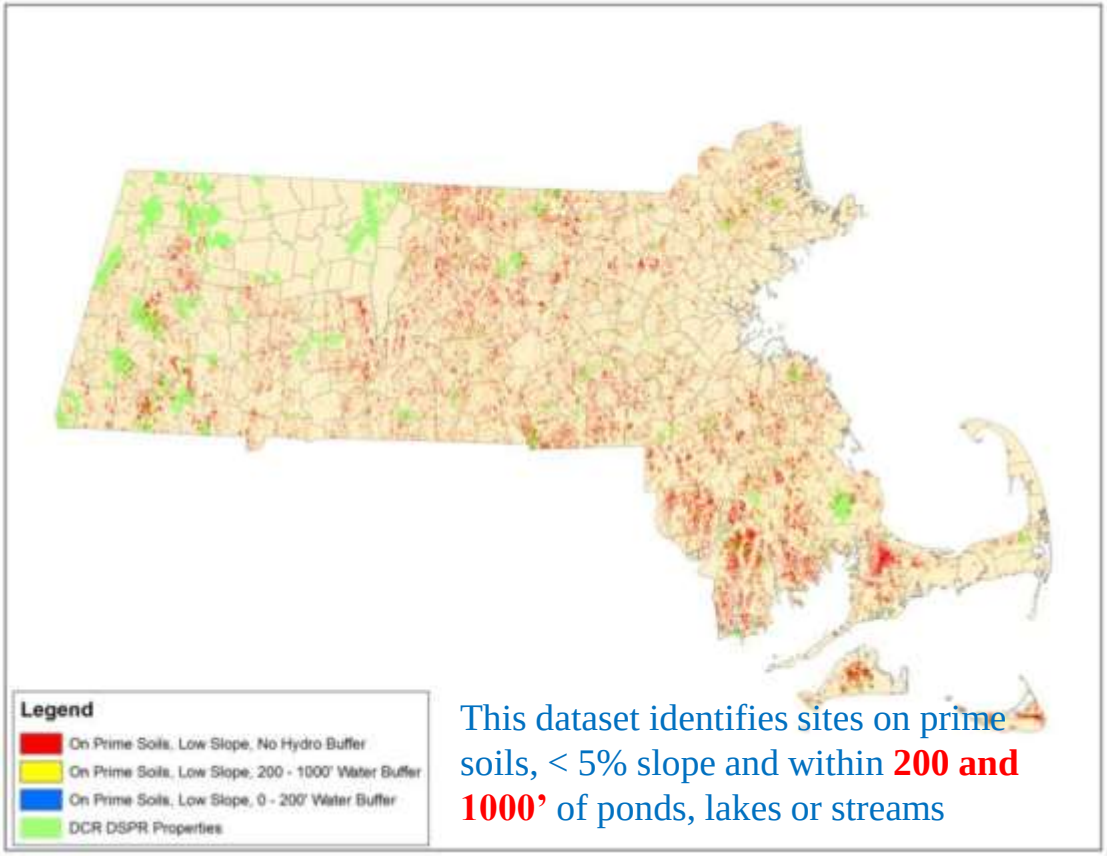
16) The proposed trail layout avoids grades in excess of 30 %



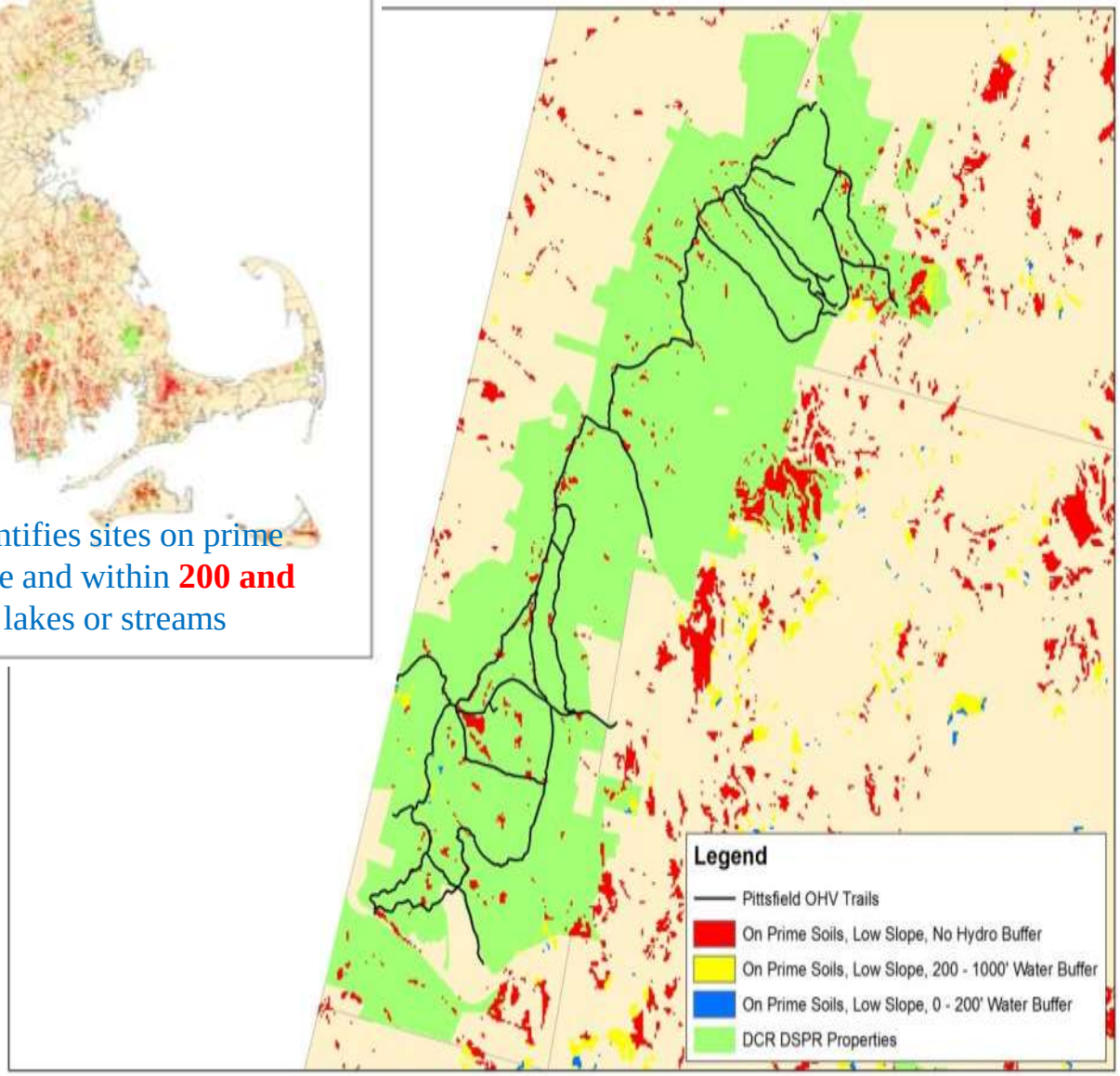


<u>Model Values (2 is Poor for OHV Trails, 1 is Fair, 0 is Best)</u>
In/out Slopes > 30%.....mask/0
(changed)

18) The proposed trail layout does not alter, disturb, or negatively impact cultural and historic resources as determined by DCR in consultation with Massachusetts Historic Commission



This dataset identifies sites on prime soils, < 5% slope and within **200 and 1000'** of ponds, lakes or streams



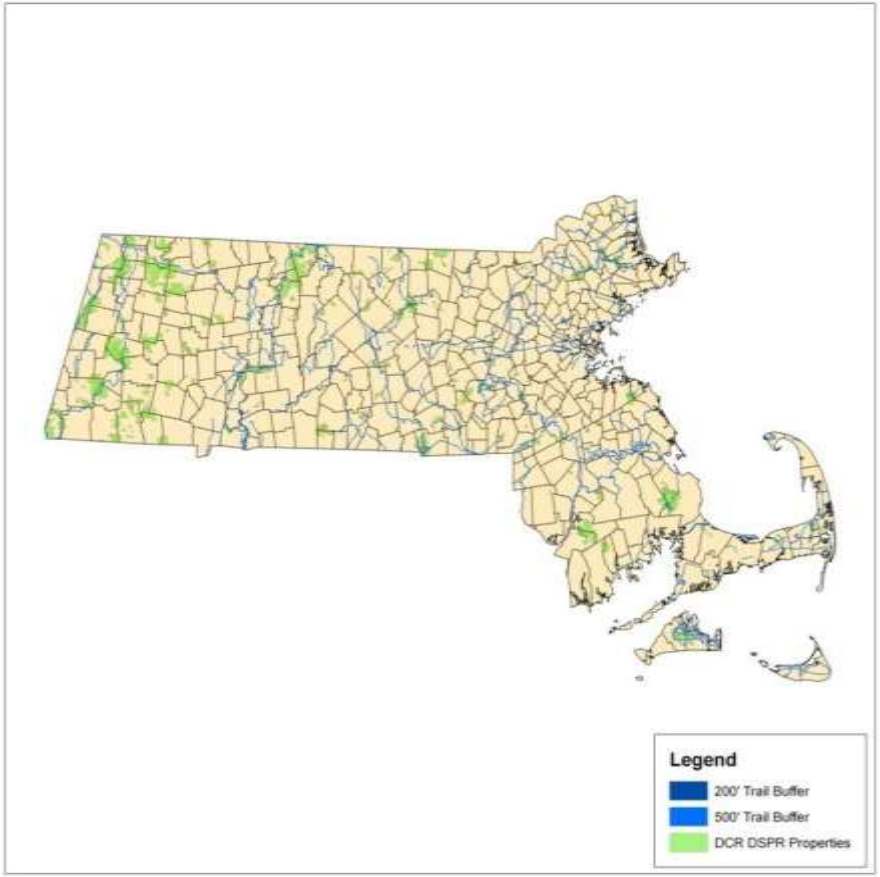
<u>Model Values (3 and 2 are Poor for OHV Trails, 1 is Fair, 0 is Best)</u>

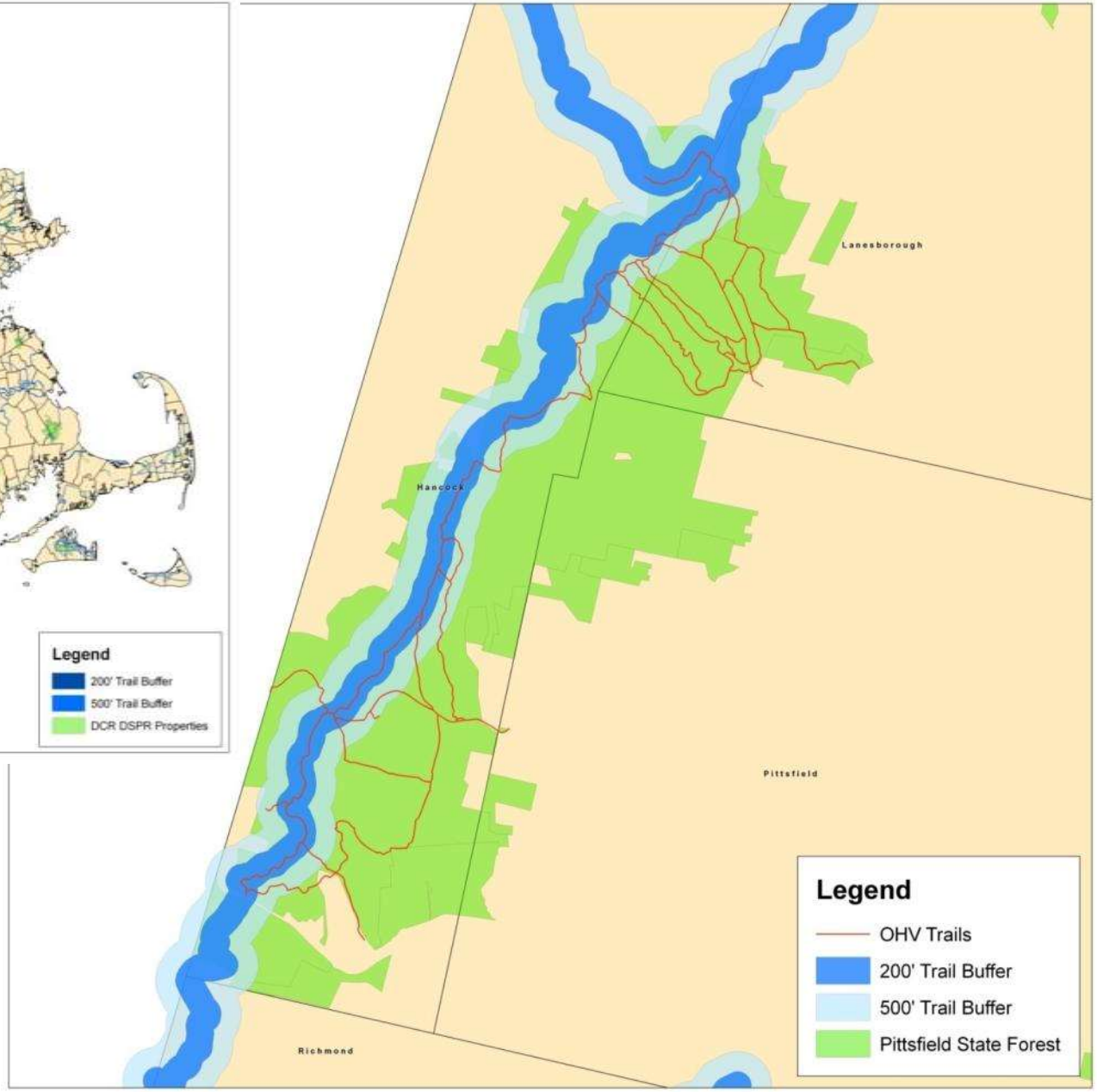
In/out Prime Soils and <5% Slopes……1/0 **(changed)**

In/out above plus 200 – 1000' Water Buffer……...2/0 **(changed)**

In/out Soils and Slopes plus 0 – 200' Water Buffer..3/0 **(changed)**

19) The proposed trail layout does not negatively impact trails of national, statewide or regional significance as identified by the Massachusetts Greenway Plan





<u>Model Values (2 is Poor for OHV Trails, 1 is Fair, 0 is Best)</u>
In/out 200'/500' Trail Buffer……2/1/0

OHV Fine Filter Model

Goal

Objectively assess OHV trail suitability based on the 20 input criteria (18 have data, 2 do not and were not used)

Process

1. **Convert each dataset to a grid (raster)**

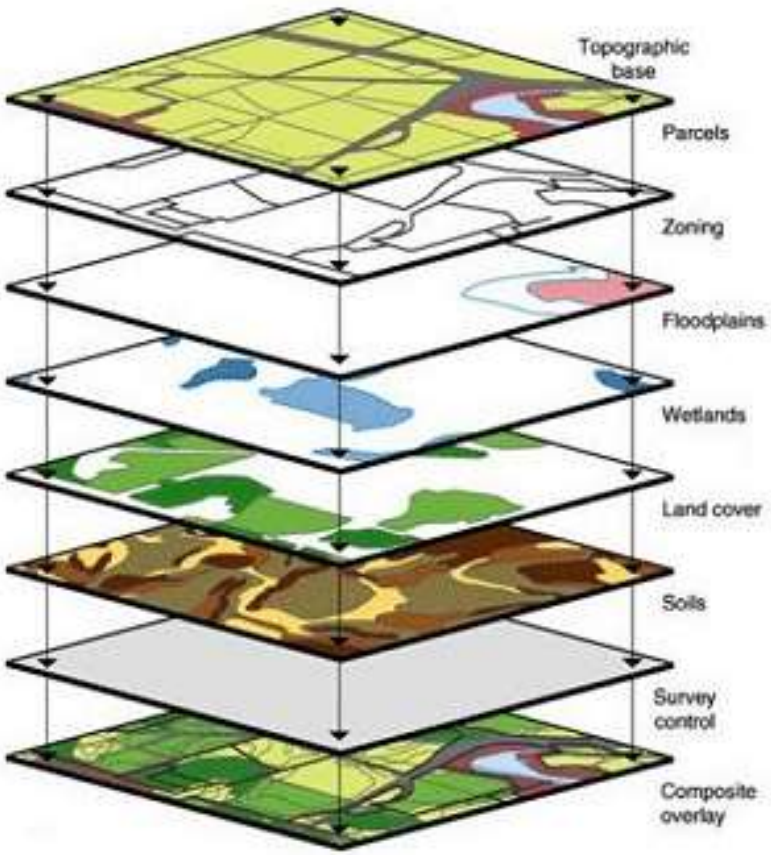
2. **Assign a numeric value to each cell (0, 1, 2 or 3 in one case at the suggestion of MHC)**

3. **Add up the values from each cell**

4. **Each final output cell gets a value based on the addition of each input cell**

5. **Mask out with 8 "No Go" grids**

6. **The total value for each cell can be from 0 (most appropriate for OHV trail siting) up to a maximum of 14 (least appropriate for OHV trail siting)**



Values Used for Evaluation

Dataset	OHV Fine Filter Value *(3/2 are poor for trail siting, 1 is moderate for trail siting, 0 is good for trail siting)*
In/Out Priority Habitat	**2/0**
In/Out Estimated Habitat	**2/0**
In/Out Rare Species (vernal pools)	**mask/0**
In/Out Priority Natural Communities	**mask/0**
In/Out Vernal Pool 100'/750' Buffer	**mask/1/0**
In/Out BioMap2 Core/Wet/VP Habitat	**1/1/mask/0**
In/Out Species Management Conservation Plan	**1/0**
In/Out Watershed Protection Act area	**mask/0**

dcr

Values Used for Evaluation

Dataset	OHV Fine Filter Value *(3/2 are poor for trail siting, 1 is moderate for trail siting, 0 is good for trail siting)*
In/Out Land Stewardship Zone 1	**2/0**
In/Out IWPA	**mask/0**
In/Out SWP	**2/0**
In/Out Wetlands	**2/0**
In/Out Wetlands 100' Buffers	**1/0**
In/Out Hydro 200' Buffers	**1/0**
In/Out Open Water	**mask/0**

dcr

Values Used for Evaluation

Dataset	OHV Fine Filter Value *(3/2 are poor for trail siting, 1 is moderate for trail siting, 0 is good for trail siting)*
In/Out Landscape Zone Reserves	**1/0**
In/Out ACECs	**1/0**
In/Out Wildlands	**2/0**
In/Out Dam, Dike or Spillway	**mask/0**
In/Out Forest Fragmentation	**2/0**
In/Out Suitable Soils for Trails	**2/0**
In/Out Slopes > 30%	**mask/0**
In/Out Unique Geological Feature	**1/0**
In/Out Archeological Resource Area	**3/2/1/0**
In/Out Long Distance Trail Buffer (200’/500’)	**2/1/0**

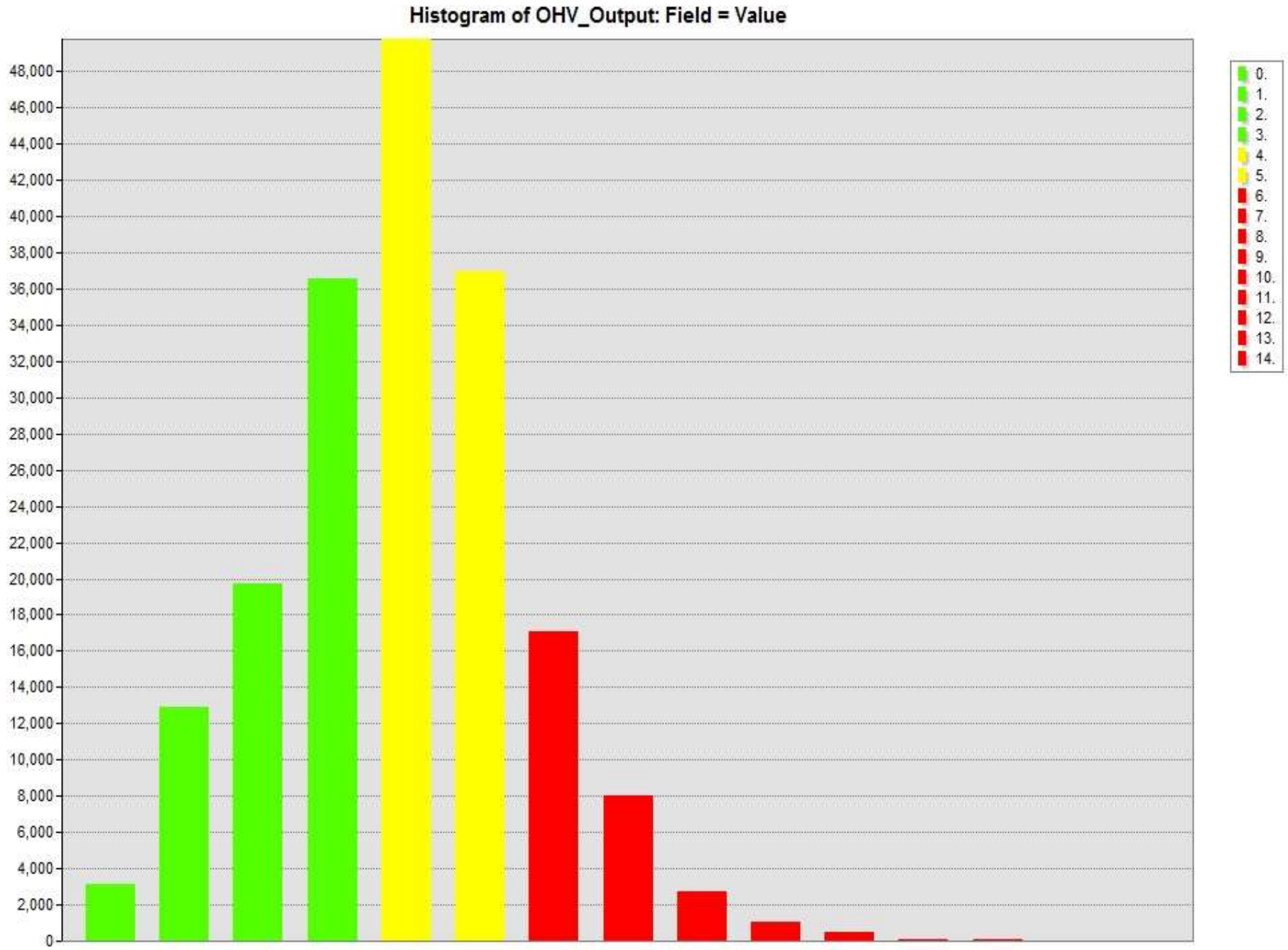
dcr

OHV Fine Filter GIS Model – Step 2

OHV_Final = OHV_Draft with 9 grids to mask out "No Go" areas plus mask out any area not in the OHV legal properties:

1. **Species of Special Concern (NHESP)**
2. **Priority Natural Communities**
3. **100' Vernal Pool Buffers**
4. **Vernal Pool Core Areas**
5. **Water Supply Protection Areas**
6. **Interim Wellhead Protection Areas**
7. **Open Water**
8. **Dams, Dikes and Spillways**
9. **Slopes > 30%**
10. **DCR Properties that do not allow legal OHV use**

dcr


Histogram of OHV_Output: Field = Value
48,000
46,000
44,000
42,000
40,000
38,000
36,000
34,000
32,000
30,000
28,000
26,000
24,000
22,000
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
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1.
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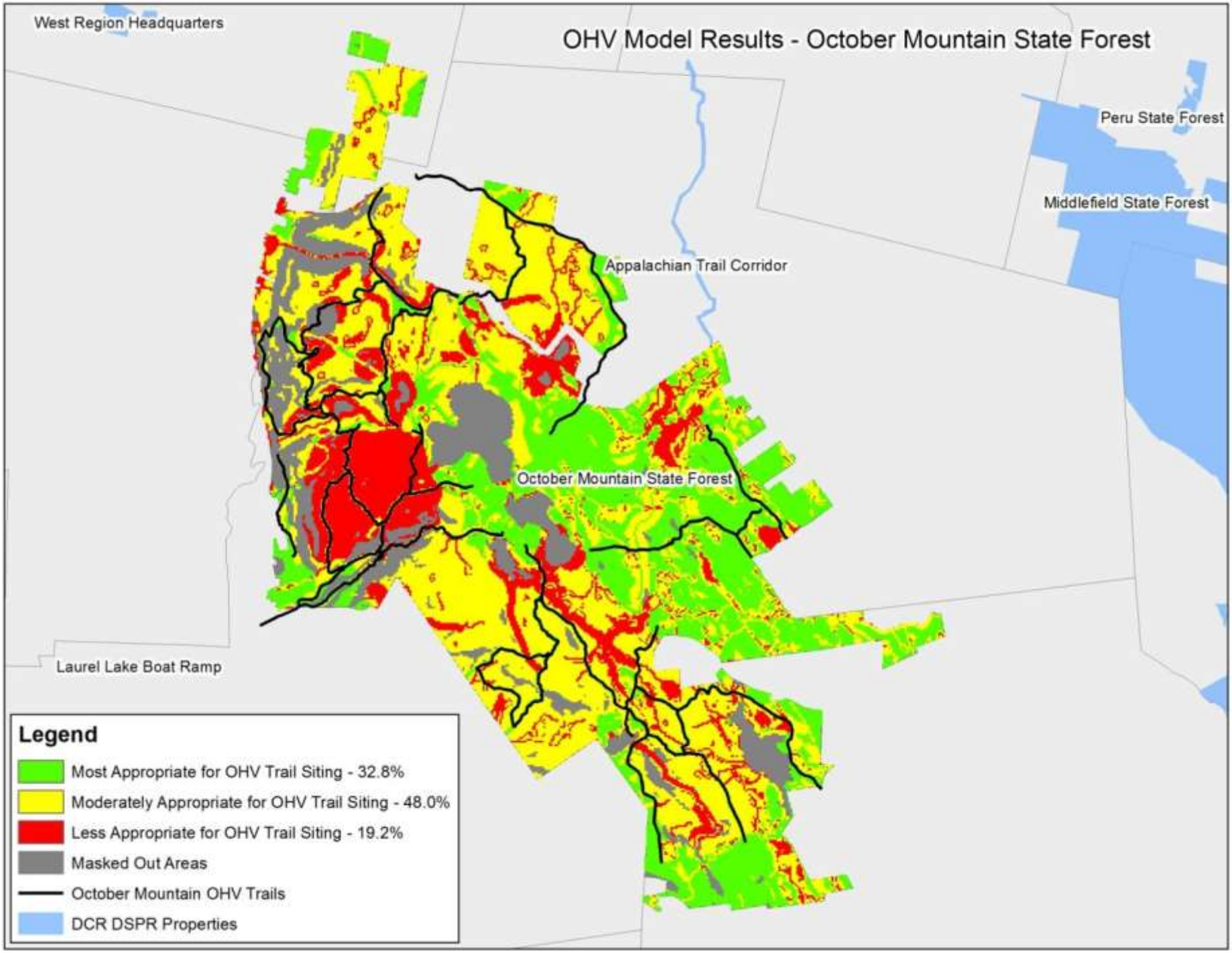
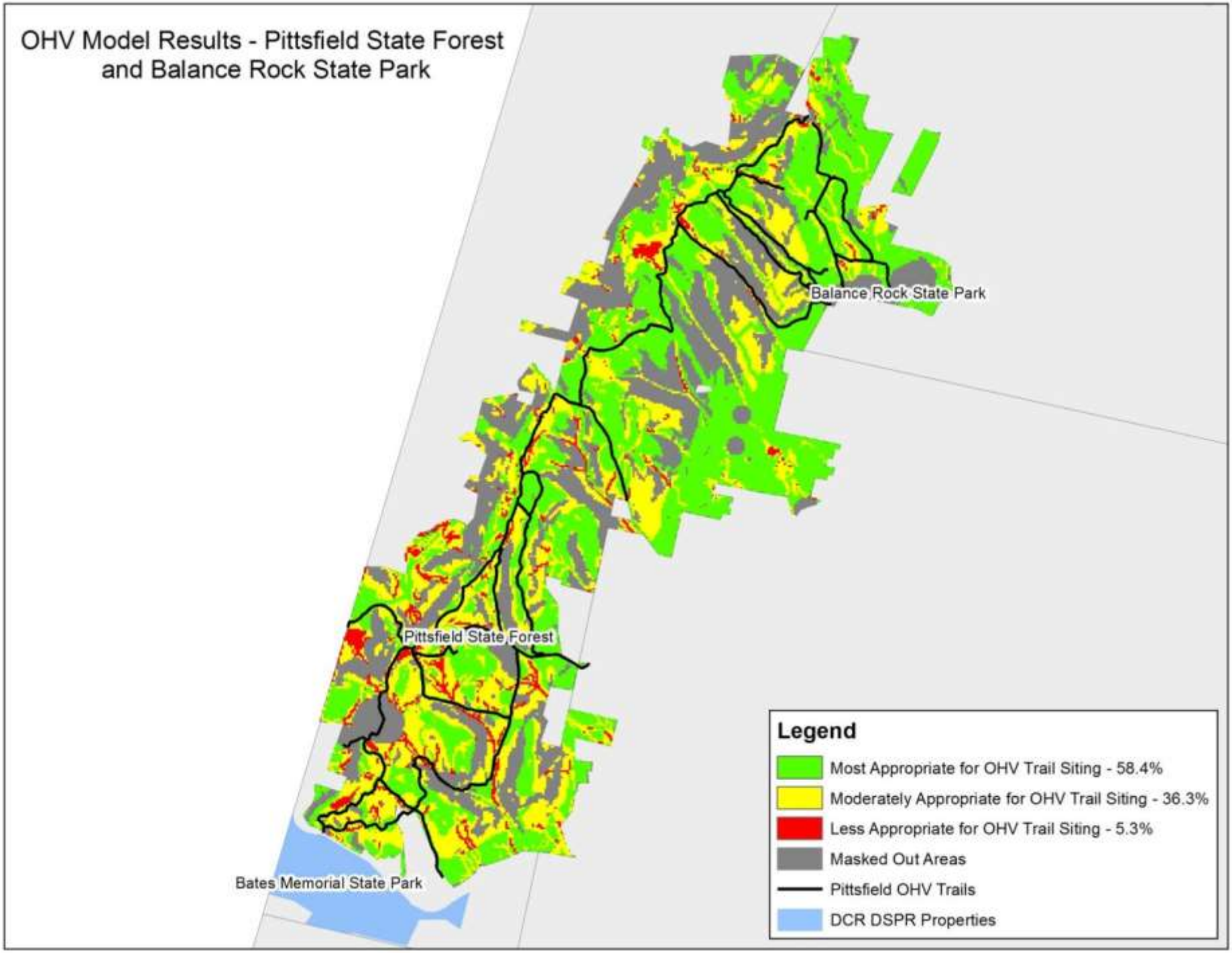

OHV Model Results - October Mountain State Forest
West Region Headquarters
Peru State Forest
Middlefield State Forest
Appalachian Trail Corridor
October Mountain State Forest
Laurel Lake Boat Ramp
Legend
Most Appropriate for OHV Trail Siting - 32.8%
Moderately Appropriate for OHV Trail Siting - 48.0%
Less Appropriate for OHV Trail Siting - 19.2%
Masked Out Areas
October Mountain OHV Trails
DCR DSPR Properties


OHV Model Results - Pittsfield State Forest and Balance Rock State Park
Balance Rock State Park
Pittsfield State Forest
Bates Memorial State Park
Legend
Most Appropriate for OHV Trail Siting - 58.4%
Moderately Appropriate for OHV Trail Siting - 36.3%
Less Appropriate for OHV Trail Siting - 5.3%
Masked Out Areas
Pittsfield OHV Trails
DCR DSPR Properties

OHV Model Summary Statistics

Property	Total Acres	Acres in Model	Model % of Total	Acres in Mask	Mask % of Total
October Mtn	16,460	14,214	86%	2,246	14%
Pittsfield	10,503	7,540	72%	2,963	28%

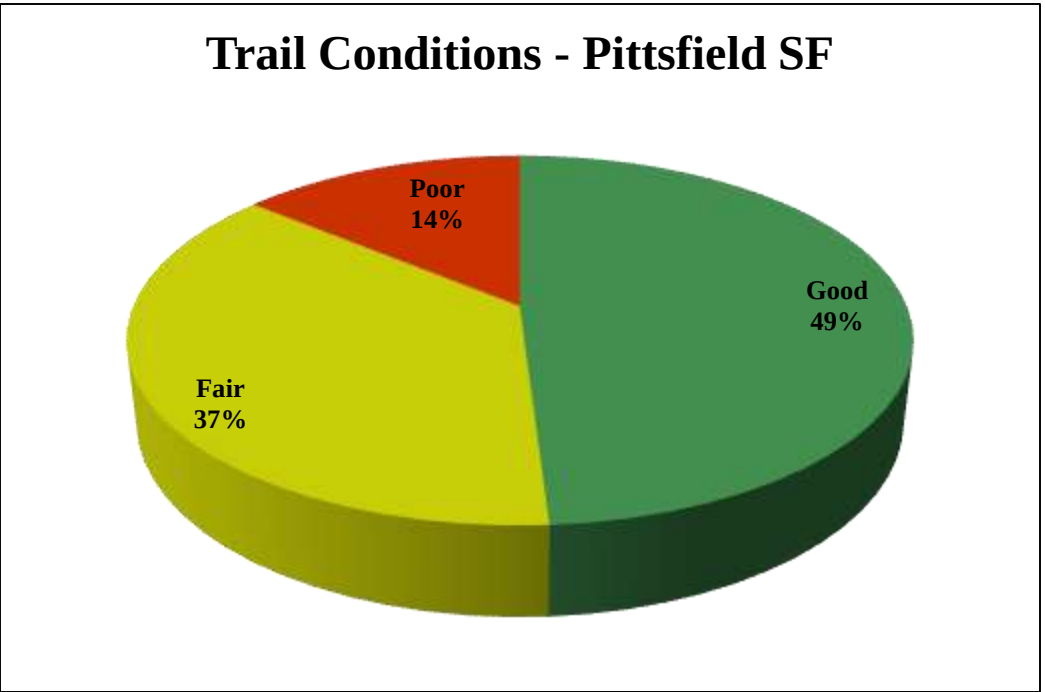
OHV Trail and Facility Design Criteria

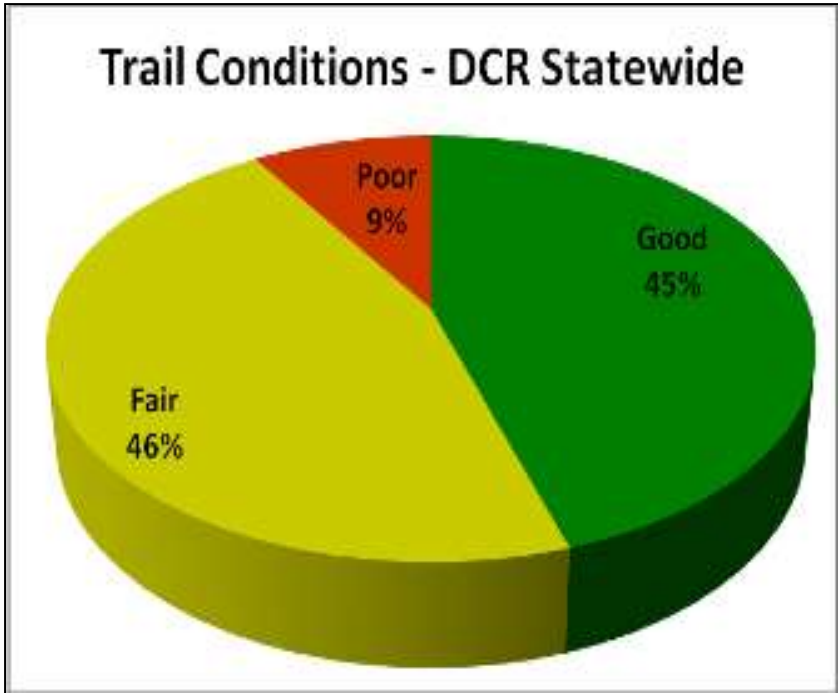
1) **The proposed trail layout complies with DCR standards for trail design, construction, and maintenance.**
2) **The proposed trail layout does not violate federal or state laws.**
3) **Trail and facility design considers local planning and zoning ordinances and other local regulation.**
4) **The proposed trail layout does not pass through a parcel with deed restrictions or other agreements regarding motorized trail use.**
5) **The proposed trail layout does not lead users to private property, utility corridors or other public land that does not allow for OHV use unless specific written permission is on record with the Department.**
6) **The proposed trail layout would not produce noise impacts in excess of established Massachusetts regulations and or industry standards.**
7) **The proposed trail layout segregates incompatible uses.**
8) **Trail and facility design provides for adequate parking for the amount and type of trail and the number of anticipated users.**
9) **The proposed trail layout incorporates existing motorized off road travel corridors whenever possible.**
10) **The proposed trail layout complies with legal and public safety requirements for safe crossing of public ways, roads or other trails.**

dcr

Pittsfield State Forest Trail System

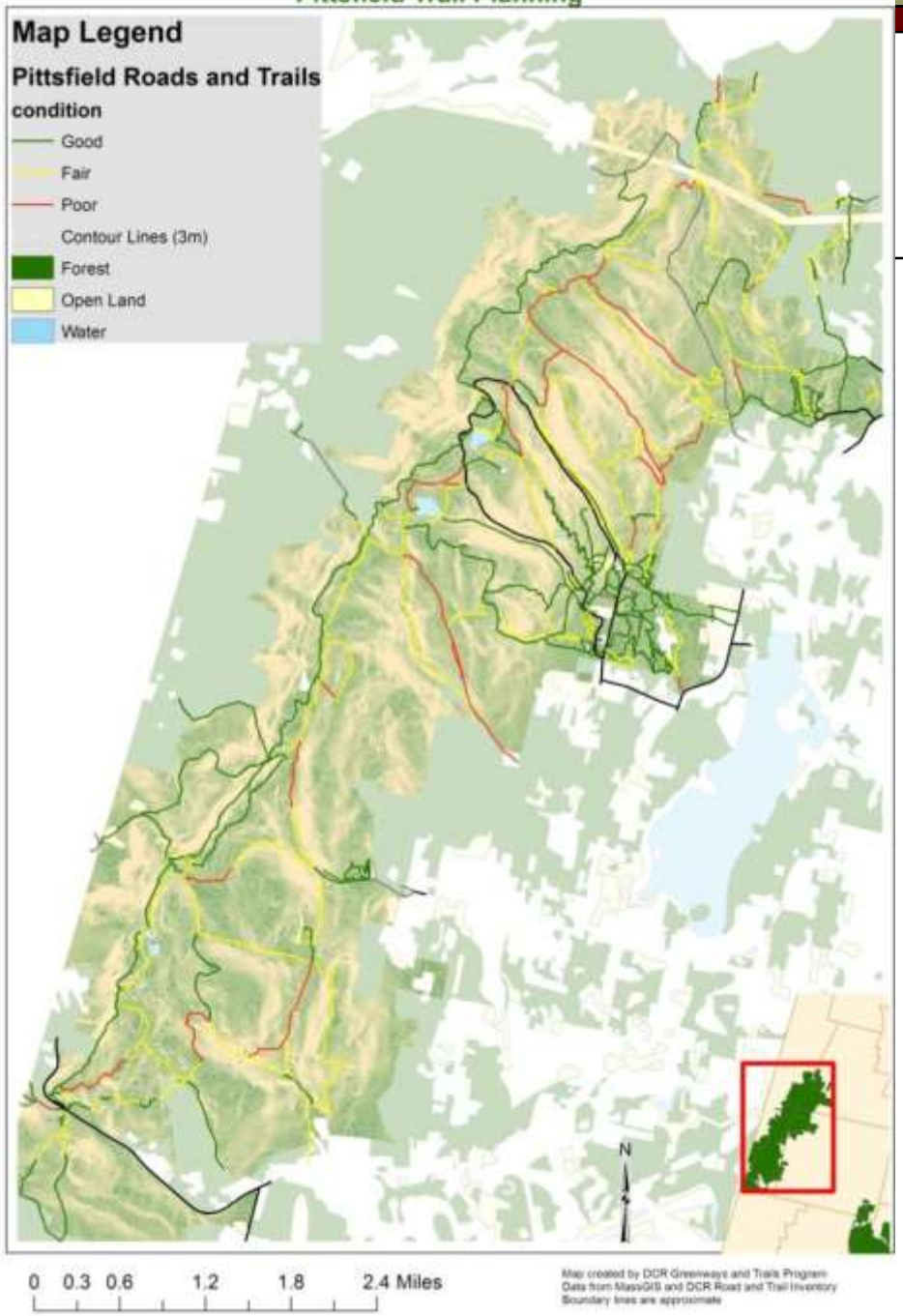
- 94 miles of authorized trail
- 31 miles of illegal / unauthorized trails





Pittsfield State Forest Trail System

Pittsfield Trail Planning



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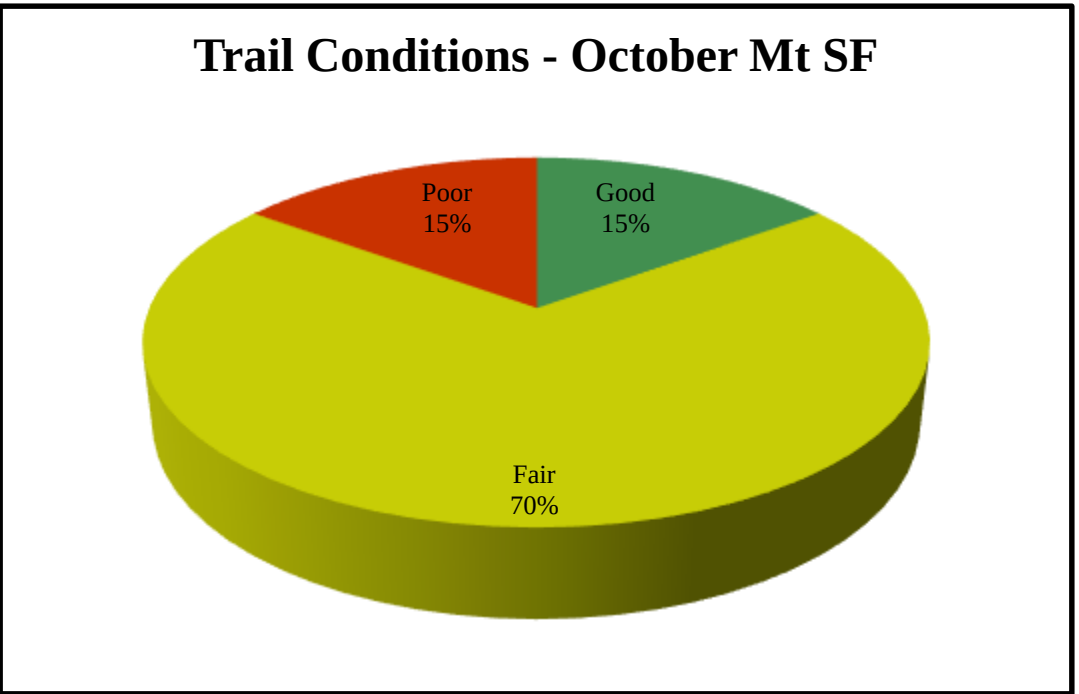
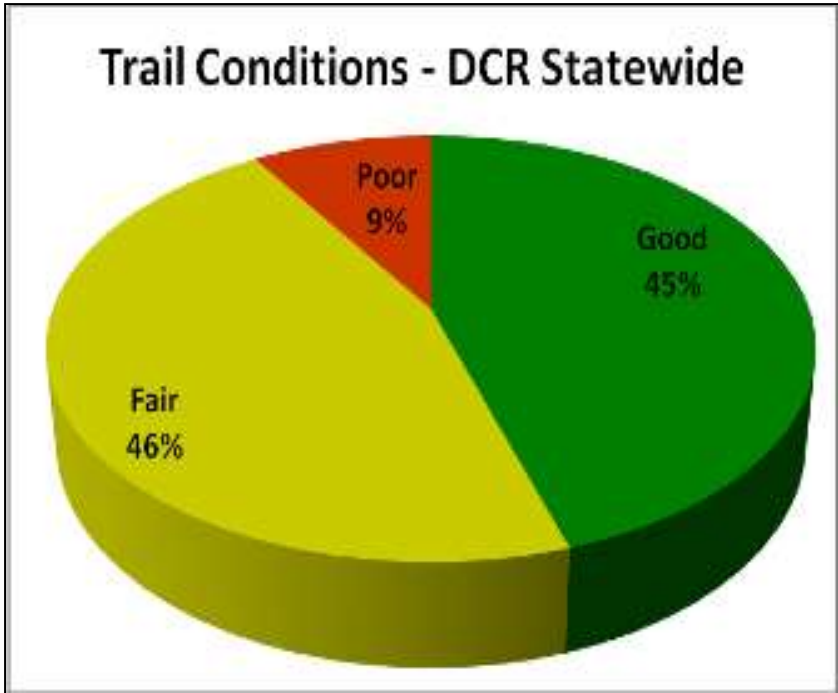
October Mountain State Forest Trail System

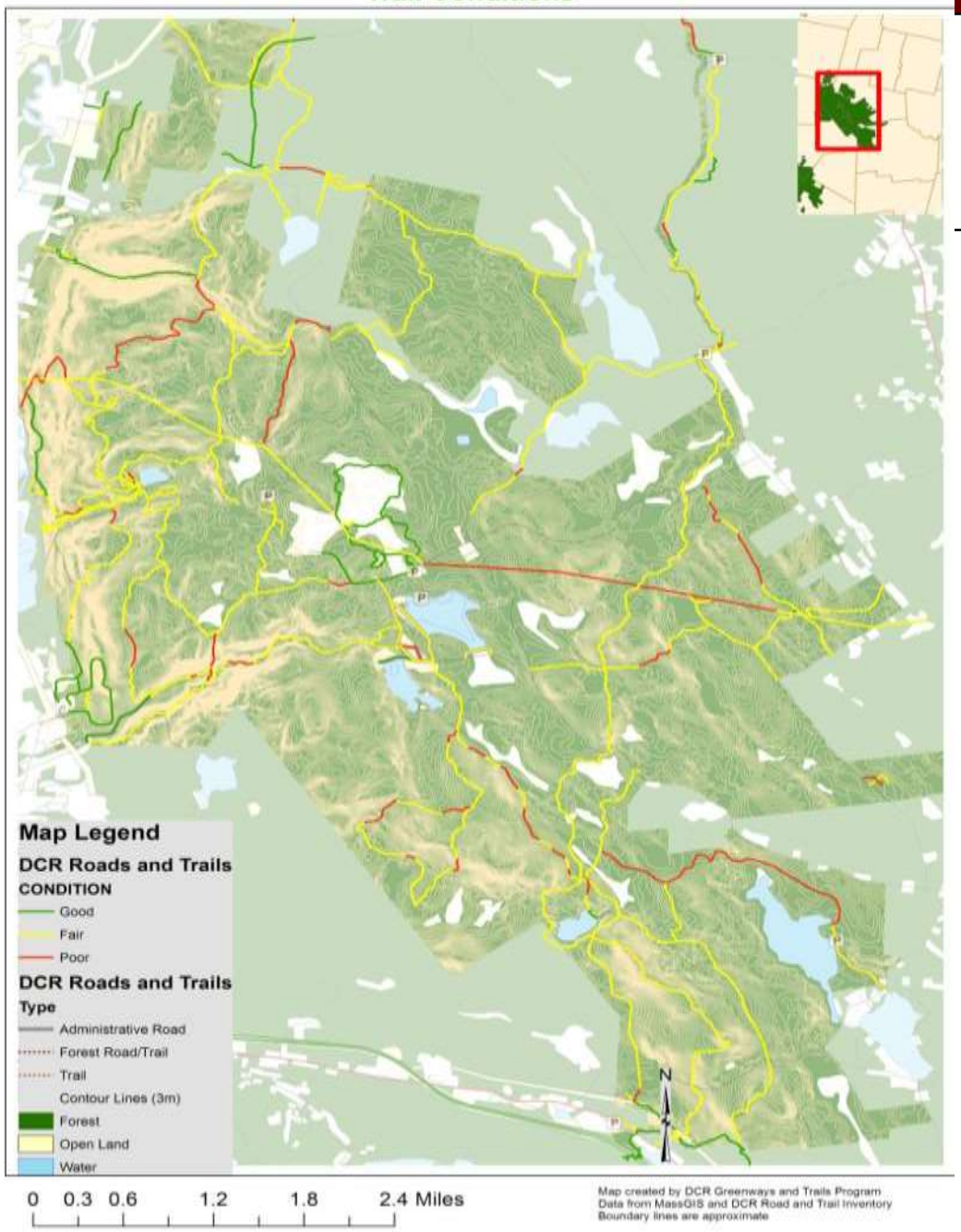
- 95 miles of authorized trail
- Over 20 miles of illegal / unauthorized trails



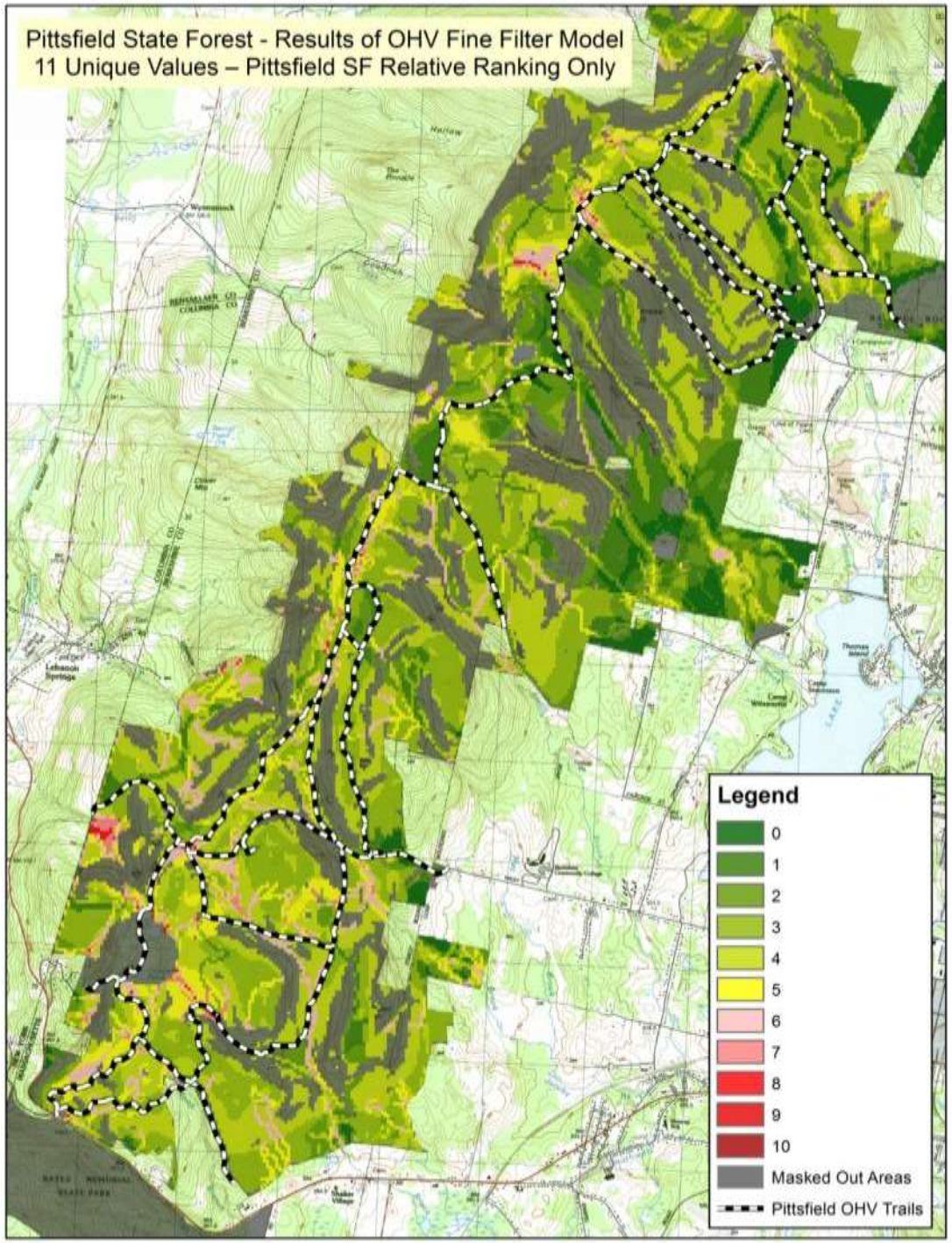


October Mountain State Forest Trail System

Trail Conditions



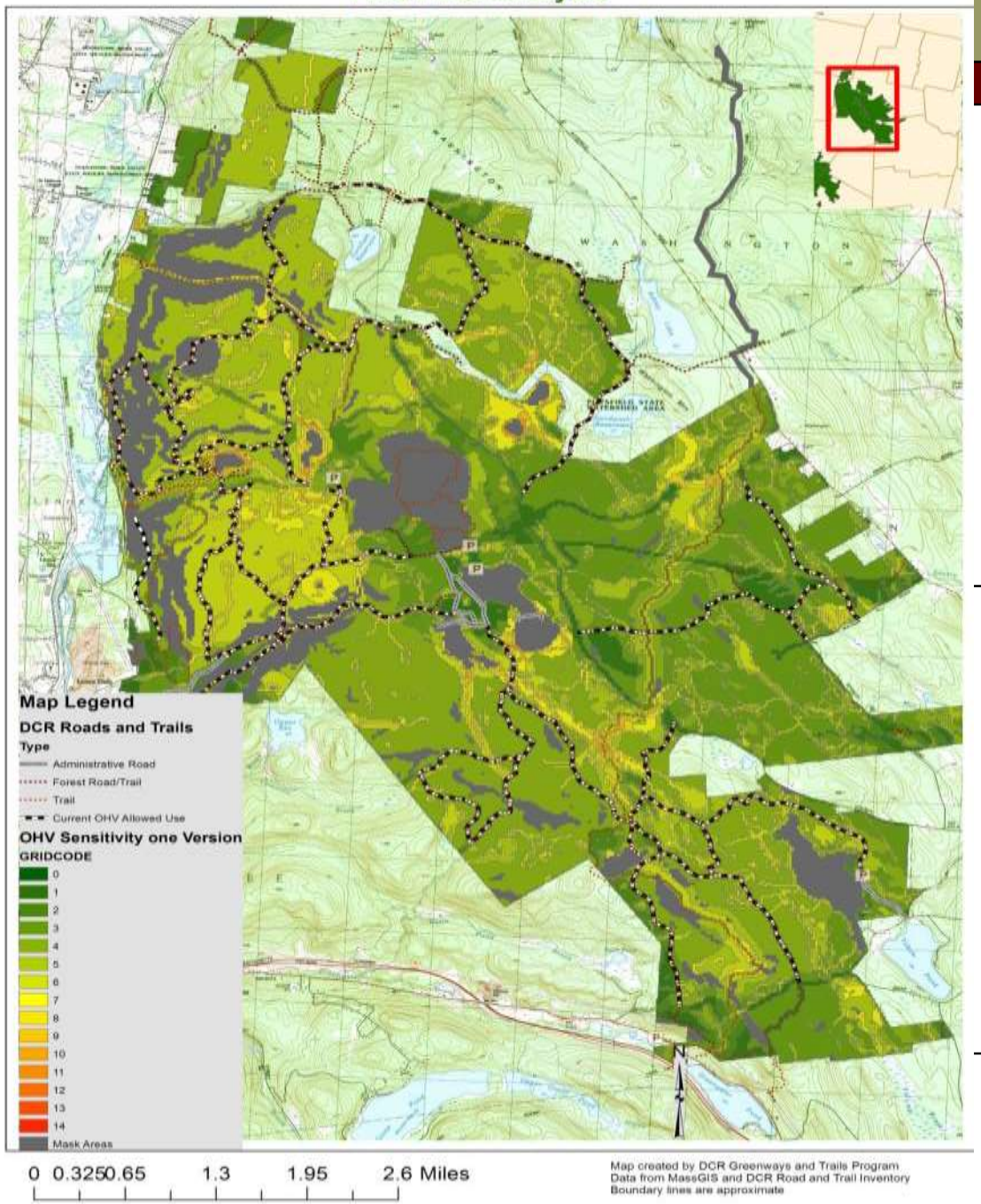
dcr


Pittsfield State Forest - Results of OHV Fine Filter Model
11 Unique Values – Pittsfield SF Relative Ranking Only
Legend
0
1
2
3
4
5
6
7
8
9
10
Masked Out Areas
Pittsfield OHV Trails

dcr

October Mountain State Forest Trail System

Fine Filter Analysis



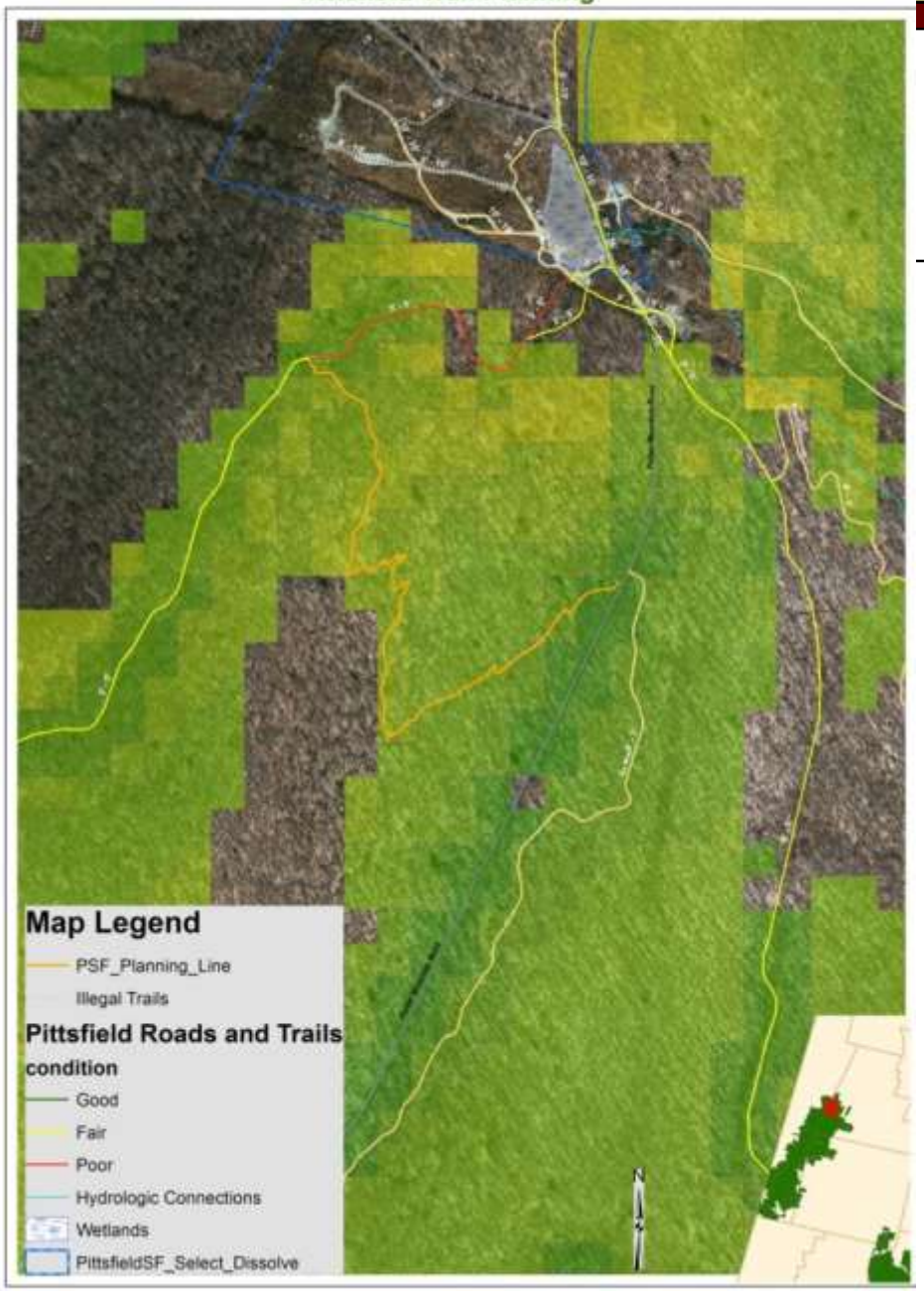
dcr

dcr

dcr

Pittsfield State Forest Trail System

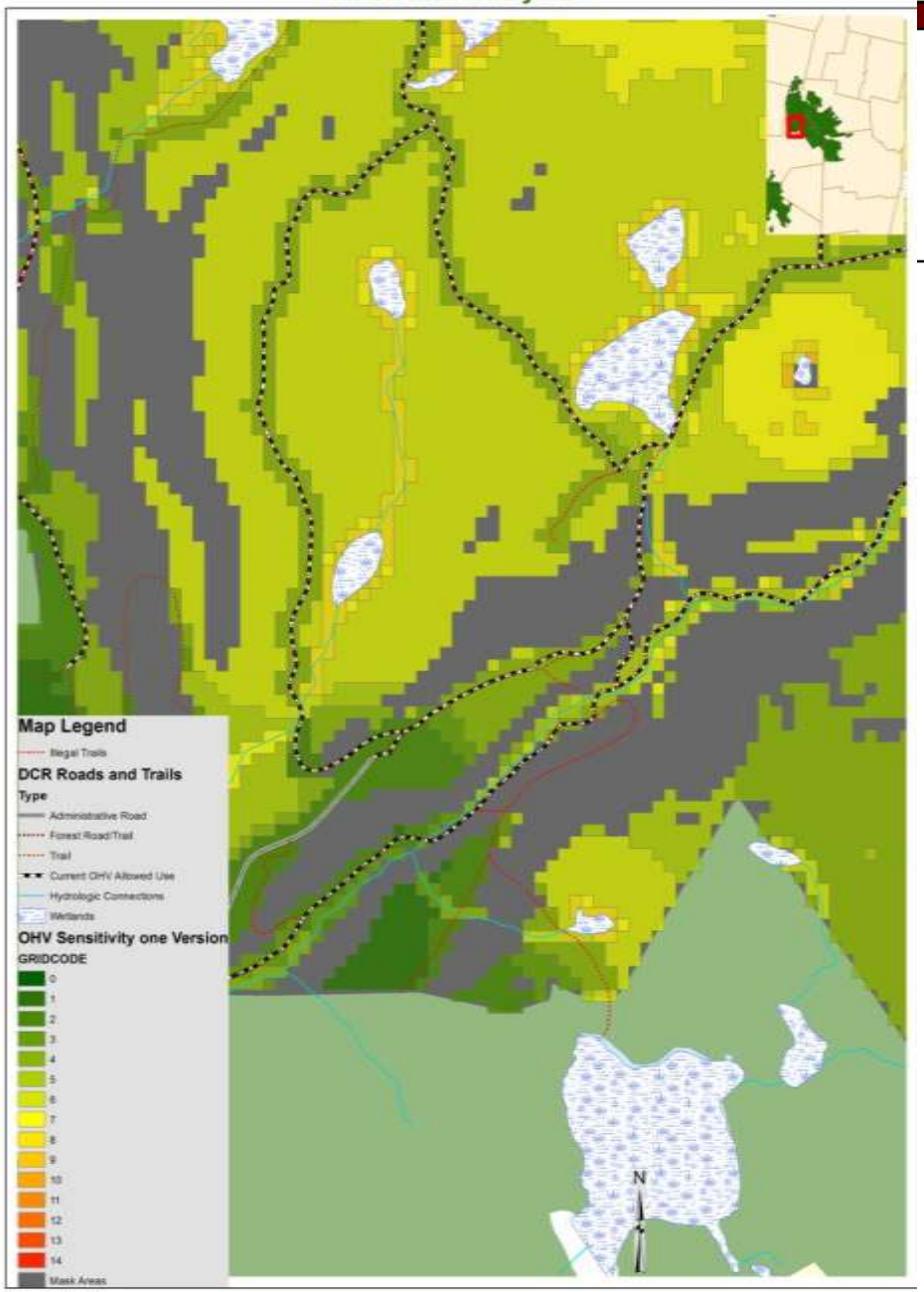
Pittsfield Trail Planning



dcr

October Mountain State Forest Trail System

Fine Filter Analysis



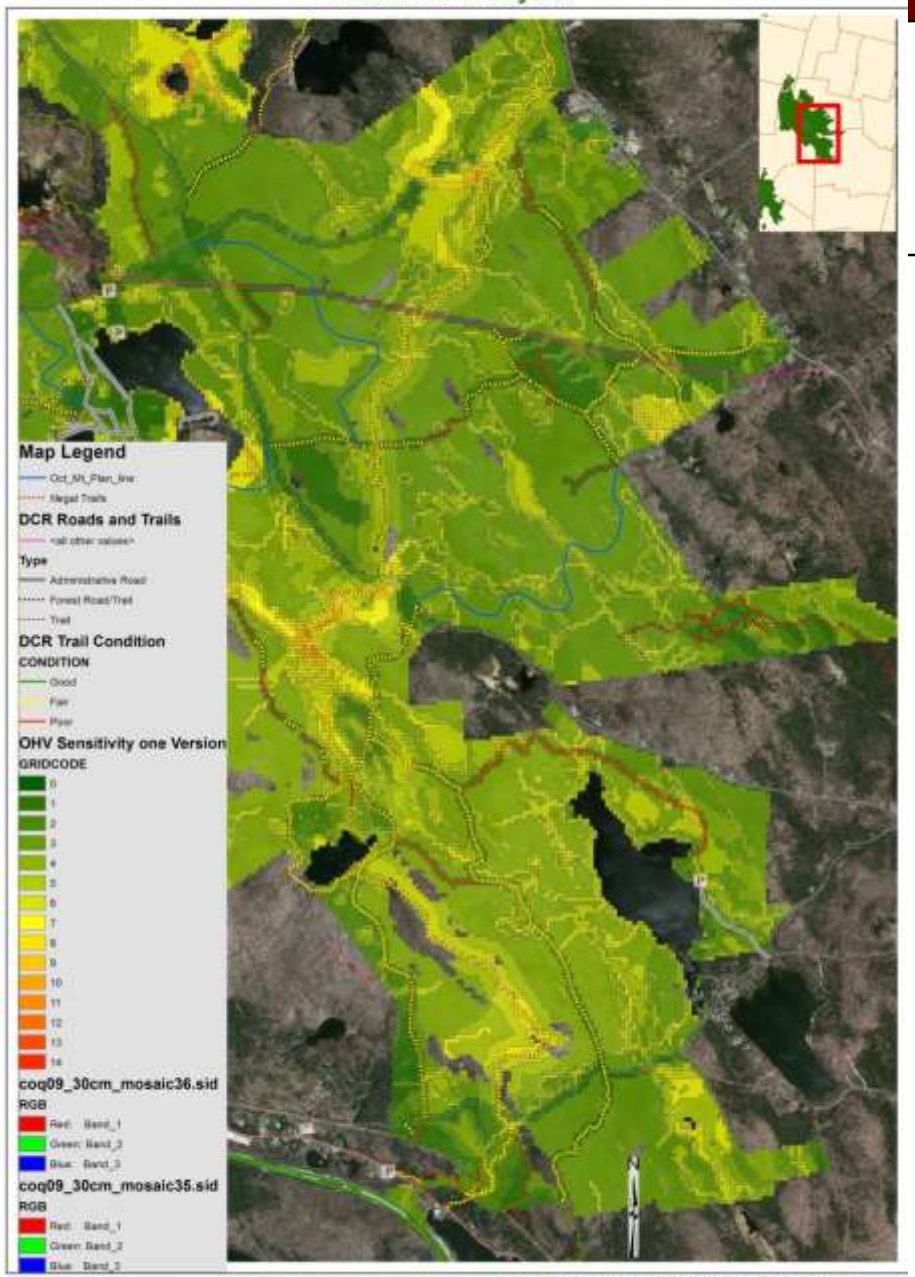
0 0.050.1 0.2 0.3 0.4 Miles

Map created by DCR Greenways and Trails Program
Data from MassGIS and DCR Road and Trail Inventory
Boundary lines are approximate

dcr

October Mountain State Forest Trail System

Fine Filter Analysis



0 0.2 0.4 0.8 1.2 1.6 Miles

Map created by DCR Greenways and Trails Program
Data from MassGIS and DCR Road and Trail Inventory
Boundary lines are approximate

dcr

dcr

dcr

OHV Operations and Management Criteria

- **1) The OHV Facility Management Plan must address facility operations needs including funding, budgeting and revenue management; trail and facility maintenance; monitoring, enforcement, educational programming and staffing.**

- **2) The facility is supported by an organized OHV club or organization whose responsibilities are established through a Memorandum of Agreement or other management contract between the organization, the Department and any other entities directly involved in the operation or management of the facility.**

- **3) The OHV Facility Management Plan has been reviewed by local municipal public safety personnel for public safety and emergency access considerations.**