

EXHIBIT 19

Summary of Invertebrate Functional Feeding Group (FFG) Composition, Beaver Brook (2008)

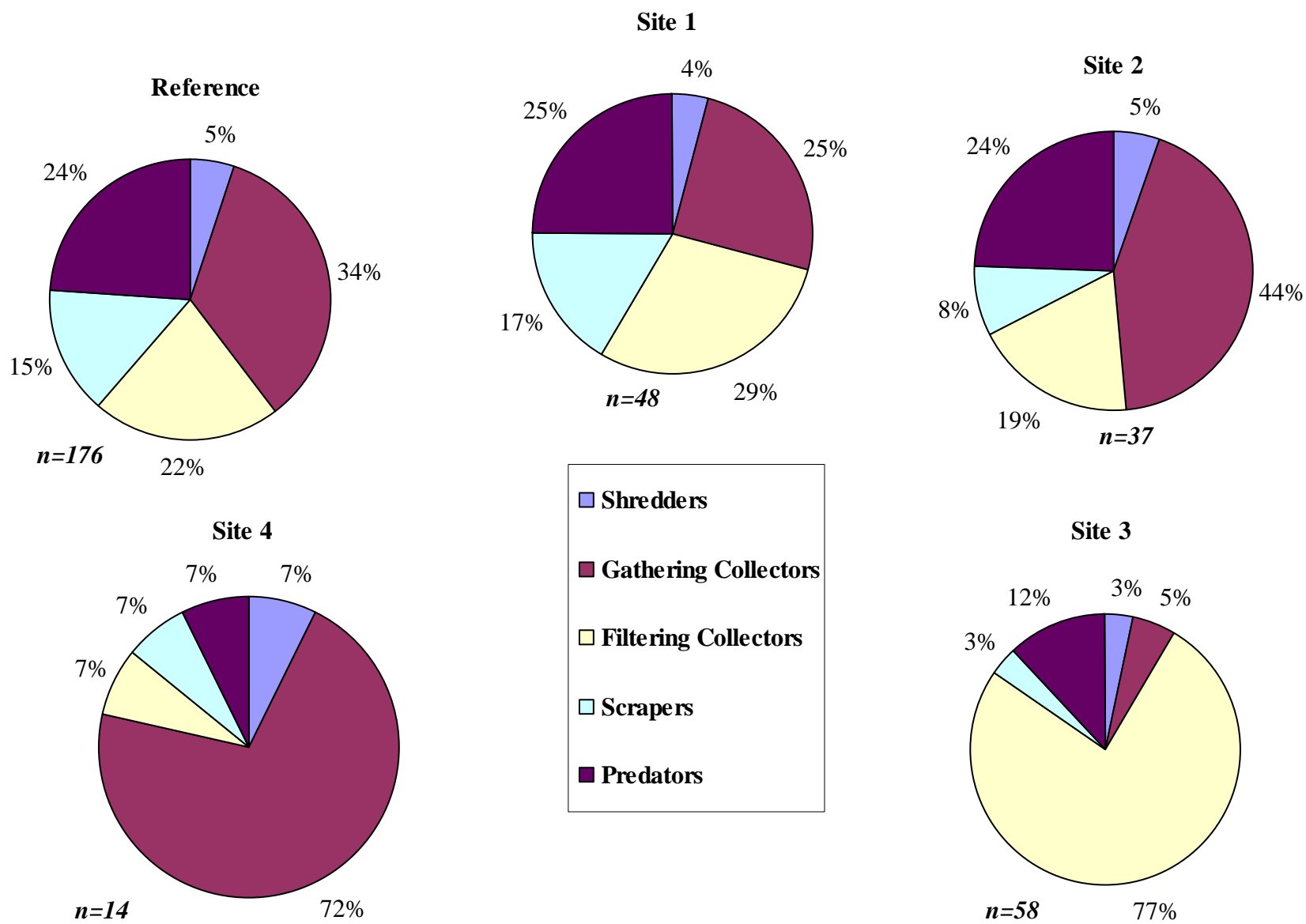


EXHIBIT 20

Review of Land-Use Field Criterion Documented In Various Assessment Methodologies

Count	Categories
9	Channel Alteration
6	Erosion (instream)
5	Erosion (out of stream)
2	Exposed Pipe
7	Pipe Outfall
6	Fish Barrier
11	Vegetated Buffer
3	Construction
4	Trash dumping/litter
10	Land use
5	Livestock
4	stream shading/canopy cover
2	manure/sewage /septic
2	oil sheen or foam
3	algae growth
8	ditches & drainage
4	water withdrawals
1	flood & erosion control structures
6	bank slope & bank height
7	water appearance
3	bare soil
1	floodplain activities
3	watershed gradient
1	salinity signs
3	channel cross section shape
4	bank stability
6	sediment instream
2	roads/bridges
1	yardwaste
1	soil compaction or gravel
3	impervious
1	snow dumps
1	combined sewer overflow

Review of NPS Field Criterion Documented In Various Assessment Methodologies

NPS Pollutant	Activities associated with pollutant	Count	
Soil Erosion / Sediment	Bare soil / fields	6	
	Stockpiled soil	3	
	construction site / unstable construction site	9	
	gravel roads - road surface erosion	3	
	road shoulder / ditch erosion	6	
	unstable culvert inlet / outlet	5	
	livestock trampling of streambank and stream crossings	4	
	dirt driveways	5	
	excavation / earth moving	2	
	dredging	1	
	mining / gravel operations	2	
	agricultural fields	5	
	forestry operations	6	
	road maintenance	2	
	streambank / shoreline erosion	6	
	direct sloped pathways towards water	3	
	rill / gully erosion or turbid water over land surface	2	
	sediment from paved roads/highways	2	
	impervious surfaces	3	
	golf courses	1	
	steep slopes (>7%)	1	
	unstable access point to water	1	
	road washouts	1	
	crumbling pavement	1	
	Nutrients	septic system	6
		livestock / improper manure storage/ manure spreading	8
fertilizer flags / very green lawns		7	
pet waste		5	
algae mats in streams		1	
lawn clippings piled next to stream or on pavement		2	
urban / suburban development		1	
soil erosion		6	
agricultural fields - fertilizer and soil		4	
construction sites		3	
forestry operations		2	
impervious surface runoff		3	
road ditches		2	

	detergents - dish soap; car wash	3
	unstable eroding streambank / shoreline	2
	sand and gravel from roads	2
	sand / gravel excavation sites	1
Bacteria / Pathogens	pet waste	6
	livestock; poor manure storage	6
	waterfowl / wildlife gathering area	3
	septic system problem	5
	sewer line problem and sanitary sewer overflows (CSOs)	2
	boat (overboard) discharge	1
	impervious surfaces	1
Toxics	staining around storm drain / spills	2
	pesticide flag / manicured lawns	8
	drainage from high-use parking lot, roads, highway	5
	exposed industrial / commercial activities	1
	heavy vehicle traffic	1
	dumpster runoff / "juice"	3
	landfills	1
	junkyards	2
	underground storage tanks (USTs)	3
	household hazardous waste	1
	auto maintenance	2
	boat/marina	1
	mining operation	1
	automobile fluid leaks	4
	roofs	1
	driveways	2
	construction	1
	road salts & snow dumps	1
Temperature (thermal pollution)	lack of stream shading	1
	riprap on streambanks	1
	drainage from large paved areas	1
	drainage from pond / dammed area	1
Other Buffer Issues	buffer not wide enough	1
	poor / degraded buffer	1
	concentrated flow path of stormwater through buffer	1
	invasive species abundant	1
Stream Channel	channel straightened	1
	bank / channel downcutting or incision	1
	severe streambank erosion / failure	1
	storm drains directly to channel	1
	excessive trash	1
	excessive build up of sediment	2
	floodplain filled in for development	1

	remains of old log drive jam	1
Culvert / Crossing	culvert misaligned	1
	hanging culvert (no fish passage)	1
	beaver dam blockage of culvert	1
	slip-lined culvert	1
Oxygen Demanding Materials	pet waste	1
	leaves, grass clippings, litter	1
	CSOs	1
	impervious surfaces	1
	septic	1

EXHIBIT 21

Soil Erodibility

Beaver Brook, Keene, NH Soil Erosivity (K-Factor)

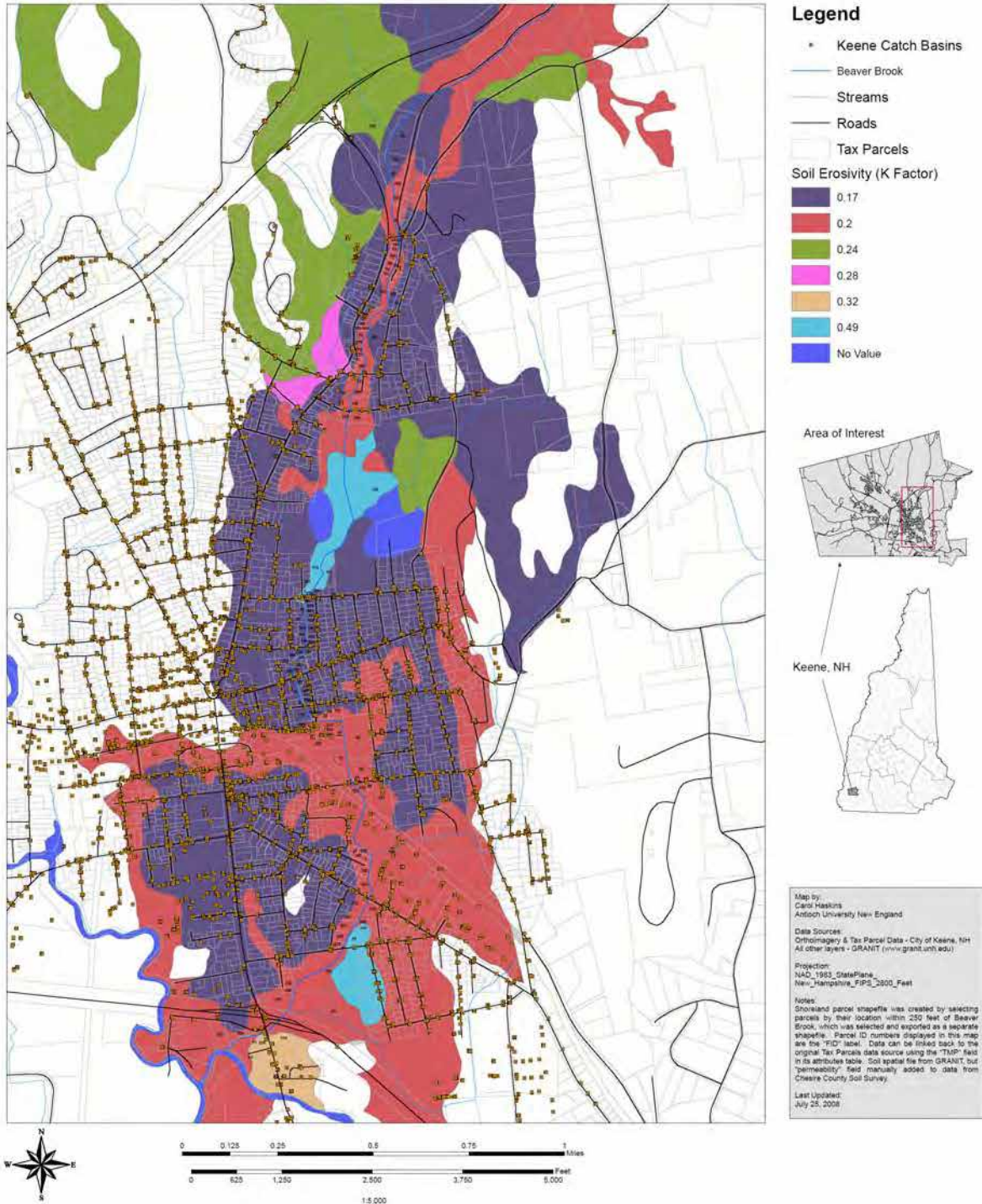
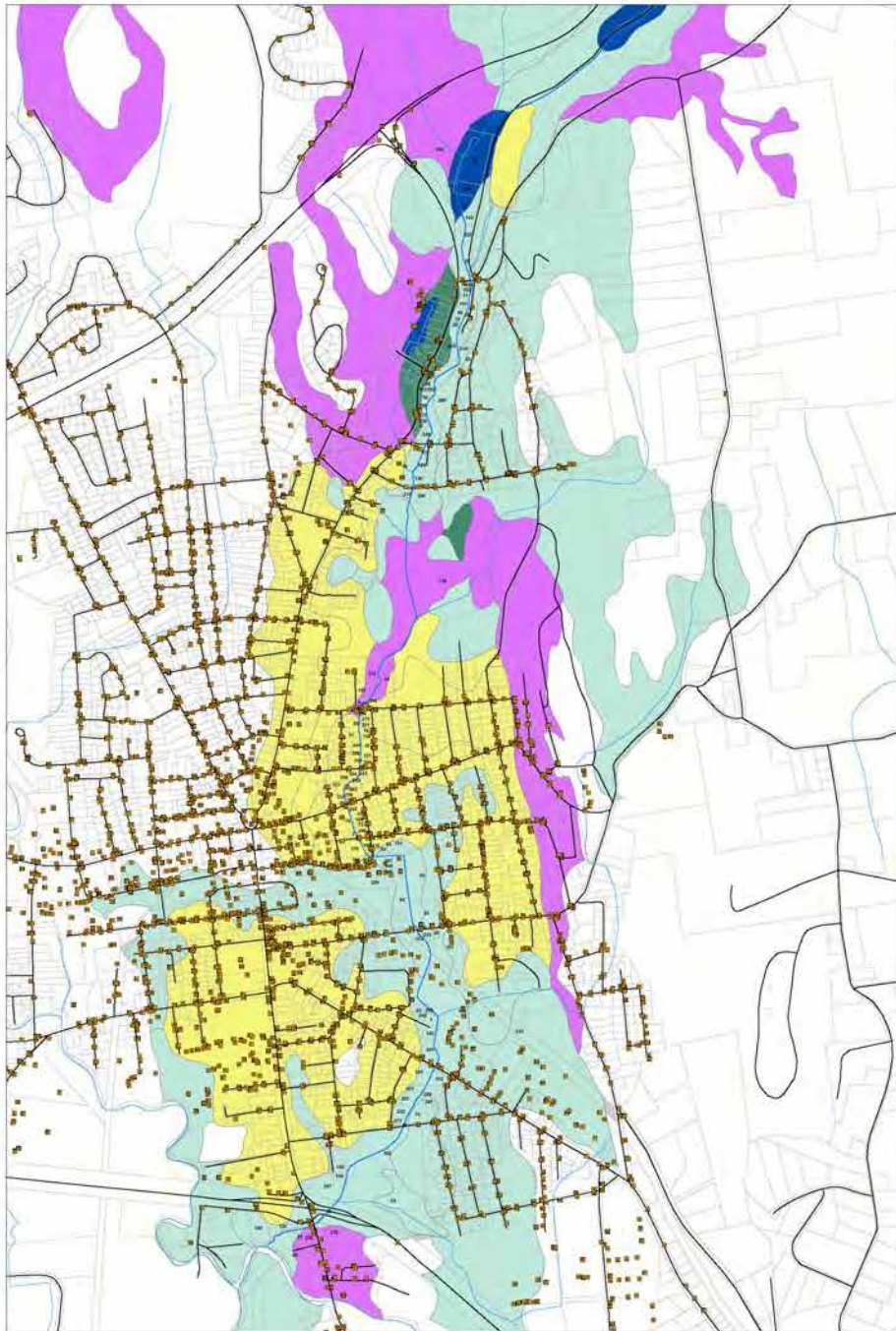


EXHIBIT 22

Beaver Brook, Keene, NH Soil Permeability



Legend

- Keene Catch Basins
 - Beaver Brook
 - Streams
 - Roads
 - Tax Parcels
- Soil Permeability (in/min)
- 0.6-2.0
 - 0.6-6.0
 - 2.0-6.0
 - 6.0-20
 - >20
 - >6.0

Area of Interest



Keene, NH



Map by:
Carol Maskins
Antioch University New England

Data Sources:
Orthoregistry & Tax Parcel Data - City of Keene, NH
All other layers - GRANIT (www.granit.unh.edu)

Projection:
NAD_1983_StatePlane_NH_m_Hampshire_FIPS_2800_Feet

Notes:
Shoreland parcel shapefile was created by selecting parcels by their location within 200 feet of Beaver Brook, which was selected and exported as a separate shapefile. Parcel ID numbers displayed in this map are the "PID" label. Data can be linked back to the original Tax Parcel data source using the "TMP" field in its attributes table. Soil spatial file from GRANIT, but "permeability" field manually added to data from Cheshire County Soil Survey.

Last Updated:
July 26, 2008

EXHIBIT 23

Field Data Sheet - Stream Corridor Assessment

Parcel ID: _____	Side of Channel (looking upstream): LEFT or RIGHT	Date: _____	Time: _____
Picture #:	Landowner Contacted: YES or NO	Surveyor's Initials: _____	
Spatial Information <i>(if GPS available)</i>	Latitude/Longitude: ____ ° ____ ' ____ " N	GPS Error (feet): _____	Waypoint #: _____
		____ ° ____ ' ____ " W	

Indicate Land Use

Single Family Residential	Agriculture	Utility	Transportation / Railroad	Undisturbed Forest
Multiple Family Residential	Construction	Landfill	Recreation / Parkland	Undeveloped Parcel
Commercial	Logging	Junkyard	Beach / Boat Access	Wetland
Industrial	Golf	Cemetery	Mining / Gravel Pit Utility	Conservation Land

Indicate the condition for each of the "Primary Factors" for ALL sites. For other categories, indicate the condition using the ranking descriptions listed in the assessment manual if the activity applies to the site. Use the adjacent page to make comments about specific categories or general site comments.

Primary Factors (fill in for ALL SITES)

Slope	Good	At Risk	Impacted	
Impervious Surface	Good	At Risk	Impacted	
Vegetated Buffer				
Composition	Good	At Risk	Impacted	
Width	<input type="checkbox"/> Good	At Risk	Impacted	
Continuity	Good	At Risk	Impacted	
Invasive Plant Species				<i>(check box if present in buffer)</i>

Potential Contamination Sources

Pesticides/Herbicides	Good	At Risk	Impacted	N/A
Driveways/Pathways	Good	At Risk	Impacted	N/A
Hazardous Waste Storage & Disposal	Good	At Risk	Impacted	N/A

Potential BOD Sources and Factors

Fertilizers	Good	At Risk	Impacted	N/A
Yard Waste	Good	At Risk	Impacted	N/A
Pet & Animal Waste	Good	At Risk	Impacted	N/A
Stream Aeration	Good	At Risk	Impacted	N/A

Sedimentation Potential

Bare Soil	Good	At Risk	Impacted	N/A
Construction Sites	Good	At Risk	Impacted	N/A

Potential Road Impacts

Paved Roads	Good	At Risk	Impacted	N/A
Unpaved Roads	Good	At Risk	Impacted	N/A
Roadside Ditches	Good	At Risk	Impacted	N/A
Bridge Crossings	Good	At Risk	Impacted	N/A
Culverts	Good	At Risk	Impacted	N/A
Road Crossings	Good	At Risk	Impacted	N/A

Potential In-stream Impacts

Streambank Cond. / Stability	Good	At Risk	Impacted	N/A
Pipe Outfall	Good	At Risk	Impacted	N/A