

Appendix B

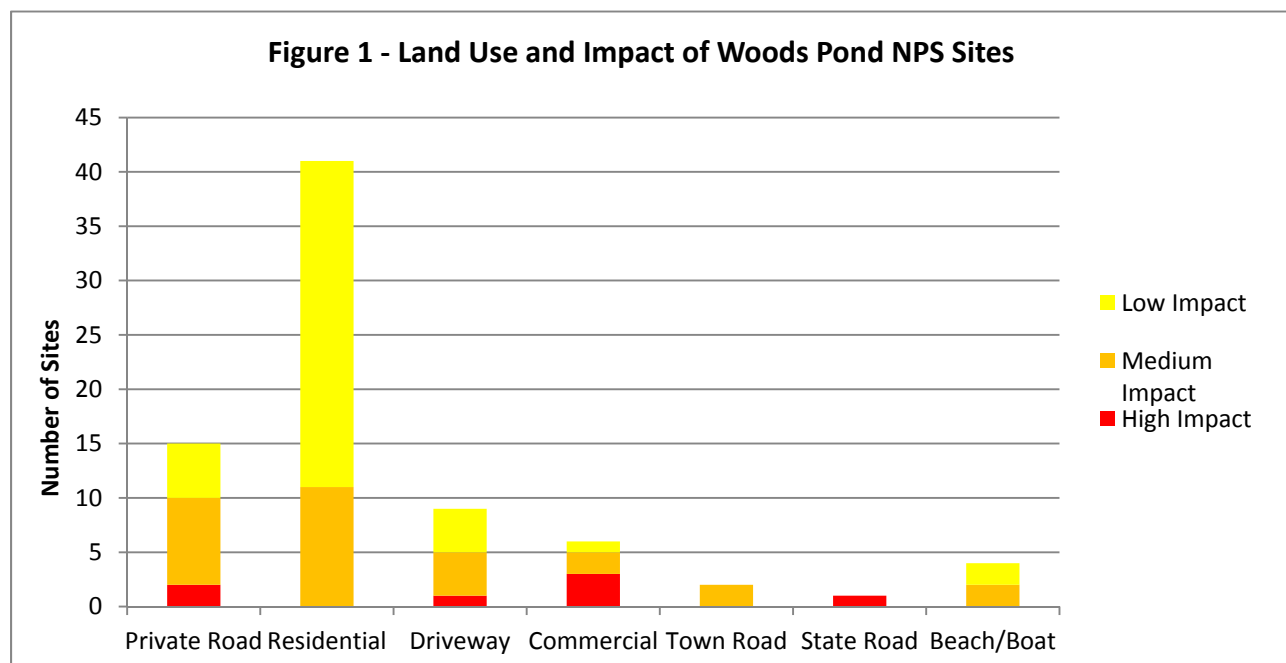
2011 Crescent Lake Watershed Survey Summary and Site List

In 2009 a shoreline survey was conducted by the Crescent Lake Watershed Association and Raymond Waterways Protective Association. The shoreline survey identified potential LakeSmart properties and erosion sites that could serve as candidate sites for a 319 grant proposal. A more comprehensive watershed survey was conducted as part of the Phase I grant project in May 2011. Nine volunteers worked with four technical leaders to visit all sites from the 2000 watershed survey and 2009 shoreline survey. The status of each of these sites was evaluated, and new sites were also documented. A total of 78 erosion sites were identified. Many of the sites from the 2000 survey were no longer problem areas. Some of these sites had been clearly fixed by landowners and others improved as land use changed (e.g., vegetation established naturally or runoff path was changed). The findings of the survey were entered into the NPS Site Tracker and mapped using Google Earth.

Table 1 – Land Use and Impact of Crescent Lake NPS Sites

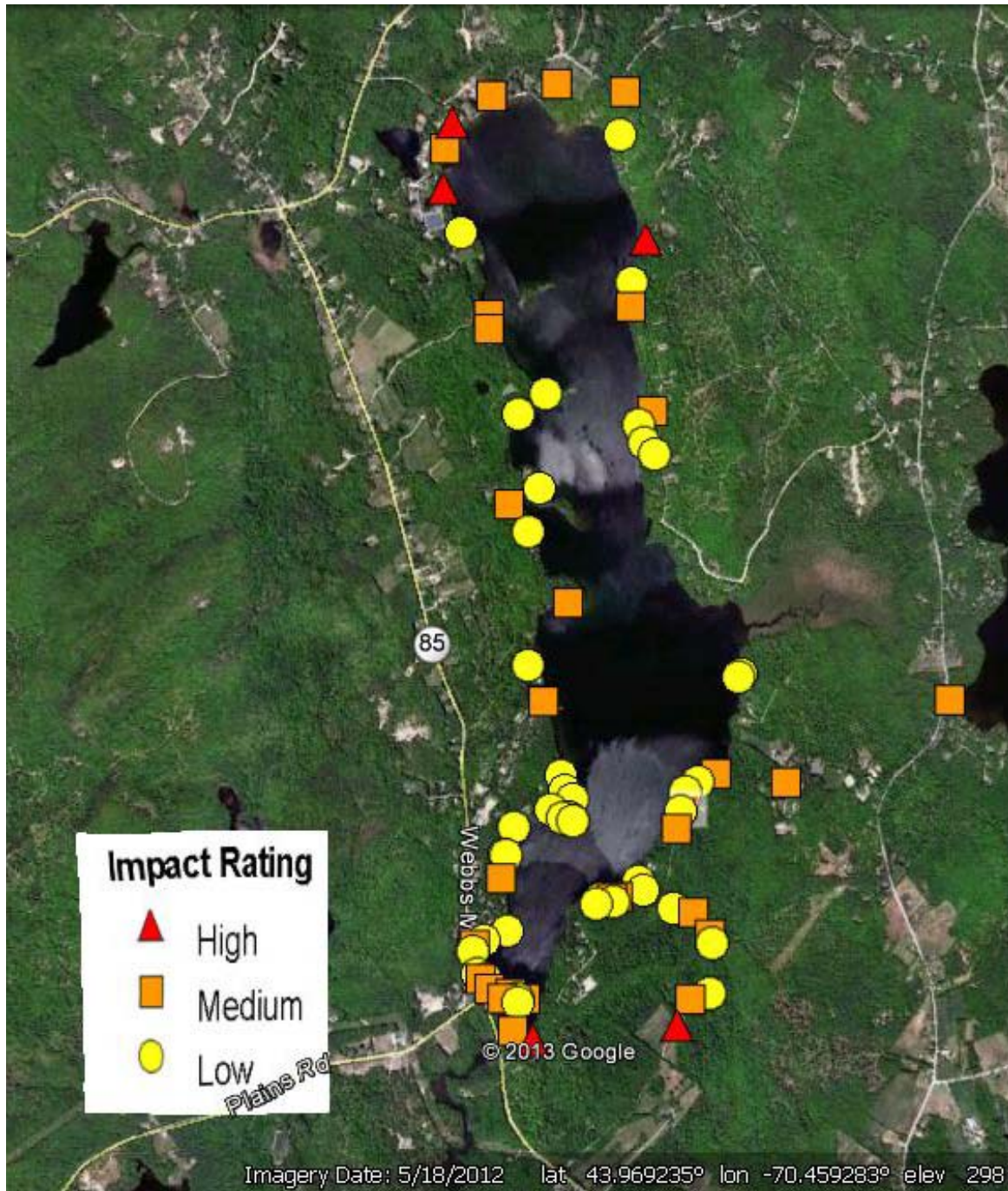
Land Use	High Impact	Medium Impact	Low Impact	Total Sites
Private Road	2	8	5	15
Residential	0	11	30	41
Driveway	1	4	4	9
Commercial	3	2	1	6
Town Road	0	2	0	2
State Road	1	0	0	1
Public Beach & Boat Launch	0	2	2	4
Total	7	29	42	78

Figure 1 - Land Use and Impact of Woods Pond NPS Sites



Appendix B

Figure 2 – 2011 Crescent Lake Watershed Survey Sites



2011 Crescent Lake Watershed Survey Results

Latitude	Longitude	New Site Number	Original Sector & Site	Land Use	Tax Map and Lot	2011 Problem	2011 Recommendation	Work Status	Impact	Cost
43.96586	-70.44838	1-03		residential	33&5	slight to moderate erosion under deck and along roof dripline	infiltration trench, add to buffer	Planned Phase I project	low	low
43.96599	-70.44821	1-04	7-5	driveway	33&9	slight to moderate erosion on path	install runoff diverters		low	low
43.96164	-70.44976	1-05	7-3b	commercial	12&63			TA Visit	medium	
43.96127	-70.44555	1-08	7-1	private road	12&63	moderate surface erosion	reshape -crown to north, install runoff diverters	TA Visit	medium	
43.97560	-70.45348	1-13	6-8	residential	15&21	slight surface erosion, bare pathway	create meandering path with runoff diverters, mulch/erosion control mix, add to buffer		low	
43.97610	-70.45412	1-14	6-9a	residential	15&22	undercut shoreline, inadequate shoreline vegetation	allow undergrowth to grow, maintain buffer, define foot path, install diverters	TA Visit	low	low
43.97689	-70.45445	1-15	6-10	residential	15&23	slight surface erosion, undercut shoreline, inadequate buffer	former ground cutting allowed to grow up, establish buffer, no raking, shore stabilization to side and lake side of stairs		low	low
43.97749	-70.45360	1-16	6-11	residential	15&24	fenced yard; try again when landowner is in			medium	
43.98205	-70.45494	1-18		residential	15&38	moderate surface erosion, bare soil, inadequate shoreline vegetation, shoreline erosion	stabilize foot path; install infiltration steps/runoff diverters, erosion control mix, add to buffer	Planned Phase I project		
43.98311	-70.45487	1-19		residential	15&41	surface erosion	add to buffer, no raking -waterbars installed			
43.98488	-70.45408	1-21	5-7b	commercial	15&56	severe erosion at beach and lake access	beach stabilization and runoff diversion needed	TA Visit	high	high
43.98930	-70.45563	1-22			28&15	culvert issues, leaking pipe that is causing erosion; bare soil	stabilize food path, install runoff diverters, infiltration trench at dripline; install catch basins, remove black pipe and allow water to flow through natural buffer		low	low

2011 Crescent Lake Watershed Survey Results

Latitude	Longitude	New Site Number	Original Sector & Site	Land Use	Tax Map and Lot	2011 Problem	2011 Recommendation	Work Status	Impact	Cost
43.99115	-70.45533	1-23	5-9	town road		unstable inlet/outlet, moderate surface and shoulder erosion, bare soil	armor with stone		medium	low
43.99100	-70.46335	1-25	4-15	public beach		eroded shoreline, lack of buffer, parking lot erosion	establish buffer and stabilize parking area (note 319 grant funds used in 2002 project - did not succeed)		medium	
43.99150	-70.45944	1-25		residential		severe surface erosion; stream bank very unstable	stabilize bank	TA Visit	medium	
43.96492	-70.43592	1-30	6-1a	town road	12&?	moderate surface erosion, winter sand, undercut and eroding shoreline	install ditch, install sediment pools, armor and rip rap abutments		medium	medium
43.95061	-70.45221	2-01	1-2	private road	12 & 57	unstable culvert outlet, severe ditch erosion, roadside plow/grader berm	armor outlet, lengthen culvert; vegetate and reshape ditch, armor with stone, install sediment pools; remove grader/plow berms; grade road to shed water into two existing turnouts on opposite side of road	TA Visit	high	high
43.95186	-70.45136	2-02	1-3	private road	12 & 57	slight surface erosion, ditch erosion, plow/grader berm on turnout side, ditch flows directling into stream	reshape ditch, install sediment pools before stream/culvert crossing, grade to encourage flow to turnout	Planned Phase I project	medium	medium
43.95213	-70.45018	2-03	1-4	private road	12 & 57	slight ditch erosion, roadside plow/grader berm, road material washing into culvert at outlet	install sediment pools before ditch enters stream, remove berms, reshape road, install turnout	TA Visit	low	medium
43.95429	-70.45003	2-04	1-5	private road	12 & 57, 32&12	turnouts too close to stream	shorten or eliminate turnouts on stream side, encourage turnouts on non-stream side	TA Visit	low	low
43.95466	-70.45016	2-05	1-6	private road	32&12	slight shoulder erosion, no buffer, road too close to stream	vegetate shoulder, establish buffer and vegetate stream bank	TA Visit	medium	low
43.95560	-70.45115	2-06	1-7	private road	32&12	road/ditch under construction during survey; plow/grader berm	remove berms			low
43.95578	-70.45237	2-08	1-9	private road	32&12	unstable outlet, riprap on one side of culvert, road runoff into stream	armor outlet	TA Visit	low	low

2011 Crescent Lake Watershed Survey Results

Latitude	Longitude	New Site Number	Original Sector & Site	Land Use	Tax Map and Lot	2011 Problem	2011 Recommendation	Work Status	Impact	Cost
43.95655	-70.45418	2-09	1-10	private road	32&12	clogged culvert	remove clog		low	low
43.95694	-70.45447	2-10		driveway	32-12	2 driveways to camp	close off driveway, vegetate & mulch; vegetate shoulder, install detention basin, install rubber razor		low	low
43.95625	-70.45574	2-12	1-12	residential	32&8	moderate surface erosion, bare soil, roof runoff erosion, inadequate shoreline erosion	define & stabilize foot path, infiltration trench at dripline, mulch/erosion control mix, establish buffer, no raking, reseed soil		medium	medium
43.56220	-70.45639	2-13	1-13a	residential	32&6	moderate surface erosion, bare soil, roof/deck runoff erosion	stabilize foot path, infiltration steps, crushed stone under deck, infiltration trench at dripline, mulch/erosion control mix, add to buffer			medium
43.95618	-70.45608	2-13	1-13b	driveway	32&6	moderate surface erosion, no vegetation at open top culvert, clogged culvert	add new surface material: gravel, recycled asphalt; instal rain garden or other vegetation to capture outlet of open top culvert		medium	medium
43.95604	-70.45598	2-14	1-14	residential	32&7	bare soil, uncovered pile around newly installed well	define foot path, cover soil pile, reseed bare soil	Planned Phase I project	low	low
43.95618	-70.45672	2-15	1-15	residential	32&5	roof runoff erosion (minor/potential issue), path erosion	infiltration steps, infiltration trench at dripline, mulch/erosion control mix		low	low
43.95593	-70.45704	2-16	1-16	driveway	32&3	moderate surface erosion	add new surface material: recycled asphalt; install rubber diverter, install turnouts	Planned Phase I project	low	medium
43.95175	-70.46136	2-17	2-1	residential	31&53	severe surface erosion, moderate shoulder erosion, bare soil, 2 uncovered piles, roof and dexck runoff erosion	Install rubber diverter, infiltration trench at dripline, drywell at gutter downspout, mulch/erosion control mix, establish buffer	Phase I project	medium	medium
43.95160	-70.41682	2-18	2-3	private road	31&51, 31&52	Moderate surface erosion, bare soil	install rubber diverter, water bar	Planned Phase I project	medium	medium

2011 Crescent Lake Watershed Survey Results

Latitude	Longitude	New Site Number	Original Sector & Site	Land Use	Tax Map and Lot	2011 Problem	2011 Recommendation	Work Status	Impact	Cost
43.95161	-70.46180	2-19	2-2	residential	31&52	slight surface erosion	infiltration trench at dripling, mulch/erosion control mix, add to buffer		low	low
43.95178	-70.46182	2-20	2-4	residential	31&51	moderate surface erosion, bank failure, bare soil	define foot path, infiltration steps, drywell@ gutter downspout, mulch/erosion control mix, no raking		low	medium
43.95219	-70.46353	2-21	2-6	driveway/residential	31&45	slight surface erosion, bare soil	add new surface material, reshape; define & stallize foot path, infiltration steps, mulch/erosion control mix, add to buffer, no raking		medium	medium
43.95035	-70.46211	2-22	2-7	residential	31&57	slight surface erosion, bare soil	stabilize foot path, install infiltration steps	TA Visit	medium	medium
43.96128	-70.45086	2-24	1-33	residential	33&2a	slight surface erosion on path, inadequate shoreline vegetation	define foot path, install runoff diverter, erosion control mulch, add to buffer, allow trees and shrubs to grow up	Planned Phase I project	low	low
43.96085	-70.45162	2-25	1-34	residential	33&2b	slight surface erosion	define and stabilize foot path; install runoff diverter		low	low
43.96011	-70.45143	2-26	1-35	driveway	33&2	slight ditch erosion -driveway, bare soil next to stream	vegetate driveway ditch, install sediment pools before driveway ditch reaches stream, erosion control mix, reseed bare soil and thinning grass		high?	
43.96006	-70.45980	2-27				lack of shoreline vegetation	establish buffer		low	low
43.96000	-70.45191	2-28	1-53a	residential	33&1	lack of shoreline vegetation -stable site besides this	establish buffer		low	
43.95923	-70.45216	2-29	1-32b	residential	32&20	moderate surface erosion, bare soil	define & stabilize foot path, infiltration steps, erosion control mix		medium	medium

2011 Crescent Lake Watershed Survey Results

Latitude	Longitude	New Site Number	Original Sector & Site	Land Use	Tax Map and Lot	2011 Problem	2011 Recommendation	Work Status	Impact	Cost
43.94988	-70.46094	2-32	1-17	private road	12&56	severe surface & ditch erosion, slight road shoulder erosion	build up road, add new surface material (gravel), install detention basin. Install sediment pools	TA Visit	high	high
43.95263	-70.46406	3-01	2-9a	public beach	31&43	moderate undercutting along swimming area	replace timbers and divert upland flows	TA Visit	medium	
43.95285	-70.46428	3-02	2-9c	public beach	31&43	slight surface erosion, bare soil	define foot path, restric acces(?), erosion control mix, establish buffer, large stone/boulder		low	low
43.95383	-70.46455	3-03	2-11a	residential	31&42	slight surface erosion, bare soil	infiltration trench @ roof dripline, erosion control mix, add to buffer		low	low
43.95412	-70.46443	3-04	2-11b	driveway	31&42	moderate surface erosion, bare soil	establish buffer		medium	medium
43.95433	-70.46387	3-05	2-14b	residential	31&39	slight to moderate erosion, inadequate shoreline vegetation and erosion	reset stone/reduction, fabric installation		low	low
43.95473	-70.46245	3-06	2-16b	residential	31&30	undercut shoreline	ad riprap & geotec to undercut areas		low	low
43.95706	-70.46282	3-07	2-23	private road		moderate to severe erosion	Build up road, add gravel, install rubber divertor, turnouts	Planned Phase I project	medium	low
43.95201	-70.46224	3-08	2-24	right-of way/private road	31&7	moderate to severe erosion	install rubber razor/waterbar	Planned Phase I project	medium	medium
43.95811	-70.46262	3-09	2-26	residential	30&61	moderate surface erosion, bare soil	erosion control mix, establish buffer, reseed bare soil & thinning grass		low	low
43.95807	-70.46251	3-10	2-25	residential	30&62	slight surface erosion, bare soil	Infiltration steps, erosion control mix, add to buffer	TA Visit	low	low
43.95929	-70.46204	3-11	2-29	residential	30&56	erosion	infiltration steps, install runoff diverter, add to buffer	Planned Phase I project	low	low
43.95969	-70.45908	3-12	2-33	residential	30&40	slight to moderate erosion, bare soil	erosion control mix, establish, buffer	TA Visit	low	low
43.95956	-70.45846	3-13		residential	30&39A	slight surface erosion, bare soil	infiltration trench @ roof dripline, erosion control mix, establish buffer, no raking	Planned Phase I project	low	low

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Latitude	Longitude	New Site Number	Original Sector & Site	Land Use	Tax Map and Lot	2011 Problem	2011 Recommendation	Work Status	Impact	Cost
43.95971	-70.45871	3-14	2-34	residential	30&39	bare soil	erosion control mix, establish buffer, no raking	Planned Phase I project	low	low
43.95971	-70.45871	3-15			30&39C	bare soil	stabilize bare soil		low	
43.96051	-70.45847	3-16	2-35	residential	30&37	slight surface erosion, bare soil	infiltration steps, infiltration trench @ roof dripline, establish buffer, no raking	Planned Phase I project	low	medium
43.96089	-70.45895	3-17		residential		erosion	infiltration steps, establish buffer		low	medium
43.96155	-70.45918	3-18		residential	30&31	slight erosion, bare	infiltration trench at roof dripline, erosion control mulch, infiltration or plant form between fence and cabin -crushed stone		low	low
43.96479	-70.46024	4-01		residential		undercut, eroding shoreline	add to buffer, riprap shoreline?	TA Visit	medium	low
43.96636	-70.46118	4-02		driveway		moderate surface erosion	reshape (crown), install runoff diverters		low	medium
43.96910	-70.45874	4-03	3-2	residential	29&20	moderate erosion	erosion control mix, establish buffer		medium	medium
43.97221	-70.46116	4-04	3-5	residential	29&10	slight surface erosion	erosion control mix, add to buffer		low	
43.97340	-70.46233	4-05	4-1	driveway	29&26	moderate surface erosion	define parking area with timber and crushed rock	TA Visit	medium	medium
43.97411	-70.46049	4-06		residential	29&4, 29&	moderate and old surface erosion, shoreline erosion	define recreation/sitting area, stabilize shoreline, establish buffer, erosion control mix		low	low
43.98169	-70.46355	4-07	4-9a	residential	?&60	moderate surface erosion, pathway erosion coming off road -from site 4-8	stabilize path, runoff diverter, infiltration steps(?)		medium	medium
43.98106	-70.46355	4-08	4-9b	private road	?&60	moderate surface erosion	grade road, install runoff diverters		medium	medium
43.98528	-70.46525	4-09	4-12a	commercial		moderate surface erosion, undercut shoreline	erosion control mix, establish buffer, redirect water from above		low	low

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Latitude	Longitude	New Site Number	Original Sector & Site	Land Use	Tax Map and Lot	2011 Problem	2011 Recommendation	Work Status	Impact	Cost
43.97735	-70.46176	4-11	4-5	residential	12&38	slight surface erosion on path	stabilize food path, install runoff diverters, erosion control mix		low	low
43.97824	-70.46010	4-12	4-6	residential	12&37	beach access and path erosion	define foot path, reinforce retaining wall	Planned Phase I project	low	low
43.95262	-70.46374		2-9d	public boat ramp	31&43	undercut shoreline, lack of shoreline vegetation, erosion and unstable access at shoreline	establish buffer, stabilize shoreline	Planned Phase I project	low	medium
43.98975	-70.46576			commercial		severe beach erosion	divert runoff, install ECM, establish buffer	Planned Phase I project	high	high
43.98896	-70.46622			commercial		severe erosion	divert runoff, install ECM, establish buffer, manager foot traffic	Planned Phase I project	medium	medium
43.98708	-70.46638			commercial		severe erosion on steep banking to lake	vegetation and install ECM	Planned Phase I project	high	high
43.95262	-70.46374		2-10	state road	31&42	Direct flow of sediment into lake from road shoulder via catch basin	Stabilize shoulders and install detention area. Direct runoff away from lake	Planned Phase I project	high	high