

Recovery Potential Screening

A Tool to Support Prioritization Planning for Watershed Restoration and Protection in Massachusetts

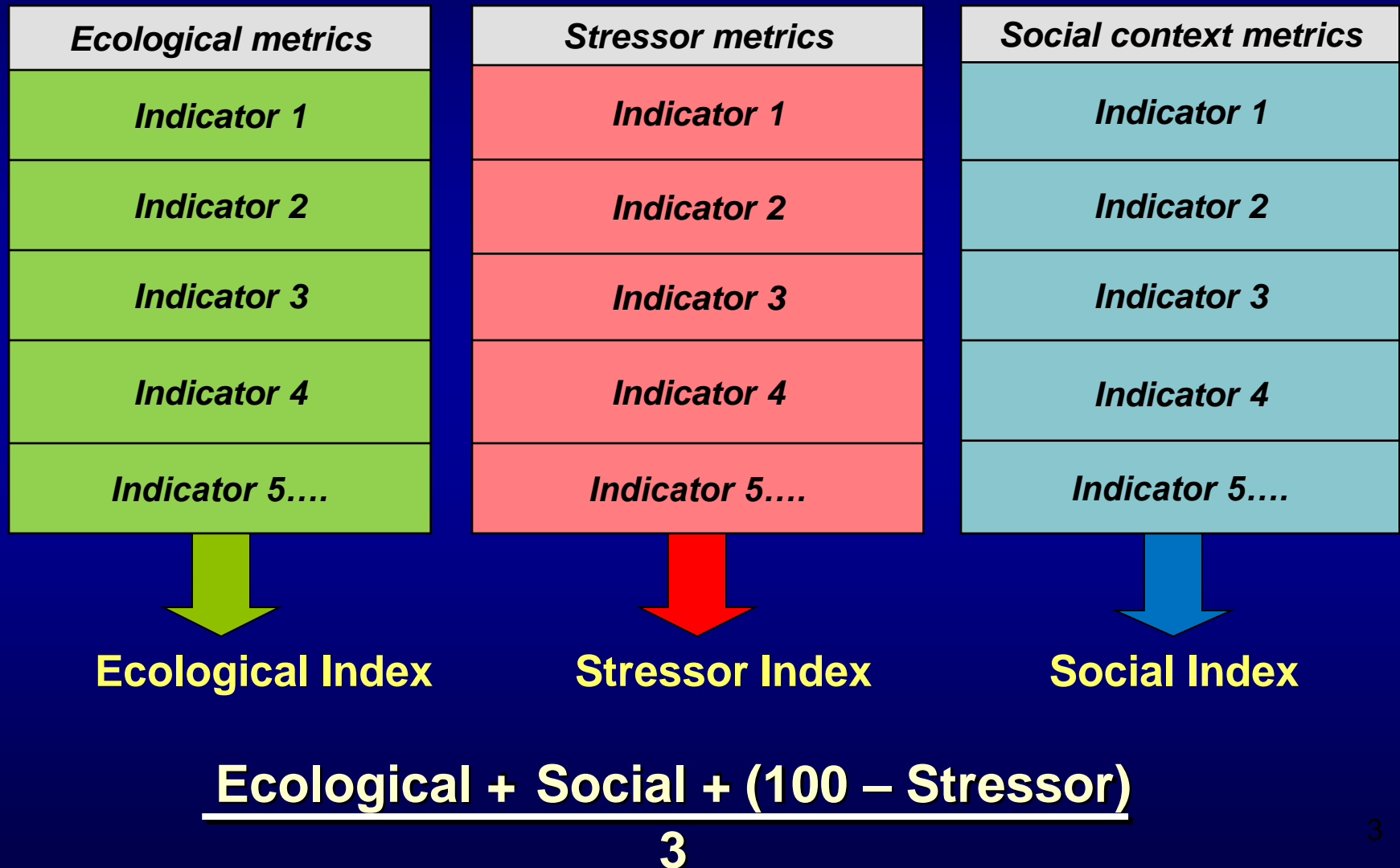
*Developed by U.S. EPA Office of Water
In collaboration with Massachusetts Department of
Environmental Protection, and with contractor support from
The Cadmus Group, Inc.*

***Presentation given by
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What is Recovery Potential Screening?

- *Recover potential* is the likelihood of an impaired water to attain a desired condition, given its:
 - Ecological capacity
 - Exposure to stressors
 - Social context affecting restoration efforts
- *Recovery potential screening* is a method for comparing restorability across watersheds.

Recovery Potential Screening - Basic Concept



Using Recovery Potential Screening to Prioritize

- Impaired waters prioritization: which watersheds (statewide or in a specific river basin) have higher potential to recover quickly?
- Revealing level of difficult: how do waters differ in recover potential, and what factors are responsible?
- TMDL implementation: how do waters with TMDLs appear to differ in restorability? Which TMDLs are good prospects?
- Nonpoint source program strategies: how can considering restorability factors help watershed plans or statewide strategies?
- Scenario-specific projects: For example, how does restorability differ across all nutrient impaired waters? Across all urban waters? For fish?

347 Calculated Metrics

- 105 ecological metrics
 - Number of confluences, watershed % forest, stream corridor % forest, etc.
- 183 stressor metrics
 - Watershed % urban, dam density, water use intensity, etc.
- 59 social metrics
 - Protected land percentage, presence of water-based recreation, number of public water supply intakes, etc.

3 Watershed Scales: HUC8, HUC12, SWMI

RPS Scoring Tool

Contains all the statewide data on indicators, watersheds
Creates rank-ordering, maps, and bubble plots

	A	B	C	D	E	F	G	H	I	J	K
	HUC Data or Indicator Info worksheets.										
10	RUN SCREENING		RESET SCREENING								
11											
12											
13	Select Watersheds		Select Ecological Indicators				Select Stressor Indicators				Select Social Indicators
14	Select watersheds to include in the screening by clicking the <i>Select Watersheds</i> button below. To clear your selections, click the <i>Clear Watershed Selections</i> button.		Select ecological indicators to include in the screening by clicking the <i>Select Ecological Indicators</i> button below. To clear your selections, click the <i>Clear Ecological Indicator Selections</i> button.				Select stressor indicators to include in the screening by clicking the <i>Select Stressor Indicators</i> button below. To clear your selections, click the <i>Clear Stressor Indicator Selections</i> button.				Select social indicators to include in the screening by clicking the <i>Select Social Indicators</i> button below. To clear your selections, click the <i>Social Indicator Selections</i> button.
15	<input type="radio"/> HUC8 <input checked="" type="radio"/> HUC12 <input type="radio"/> SWMI										
16	<input type="button" value="Select Watersheds"/>		<input type="button" value="Select Ecological Indicators"/>				<input type="button" value="Select Stressor Indicators"/>				<input type="button" value="Select Social Indicators"/>
17	<input type="button" value="Clear Watershed Selections"/>		<input type="button" value="Clear Ecological Indicator Selections"/>				<input type="button" value="Clear Stressor Indicator Selections"/>				<input type="button" value="Clear Social Indicator Selections"/>
18											
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22											
23	HUC12 ID		Ecological Indicator		Weight	Stressor Indicator		Weight	Social Indicator		
24	010600031005 (Hampton Harbor)		Soil Stability, Mean in WS		1	% Developed, High Intensity in WS (2011)		1	Nutrients Nonpoint Control Projects Presence		
25	010700040101 (Whitman River)		Watershed % Forest (INSTATE)		1	% Agriculture in WS (2011)		1	NPDES Permit Count		
26	010700040102 (Sand Brook-North Nashua River)		Open Water Buffer (61M) % Forest (INSTATE)		1	303d-Listed Segments Count (2015)		1	Segments with Nutrient TMDLs Count (2015)		
27	010700040103 (Monoosnoc Brook-North Nashua River)										
28	010700040201 (Quinapoxet River)										
29	010700040202 (Stillwater River)										
30	010700040203 (Goodridge Brook-Nashua River)										
31	010700040204 (Still River-Nashua River)										
32	010700040205 (Mulpus Brook-Nashua River)										
33	010700040301 (Willard Brook)										
34	010700040302 (Witch Brook-Squannacook River)										
35	010700040401 (Nissittisit River)										
36	010700040402 (Unkety Brook-Nashua River)										
37	010700050101 (Headwaters Sudbury River)										
38	010700050102 (Sudbury Reservoir-Sudbury River)										
39	010700050103 (Lake Cochituate-Sudbury River)										
40	010700050104 (Hop Brook-Sudbury River)										
41	010700050201 (Headwaters Assabet River)										
42	010700050202 (North Brook-Assabet River)										
43	010700050203 (Fort Pond Brook)										
44	010700050204 (Elizabeth Brook-Assabet River)										
45	010700050205 (River Meadow Brook)										
46	010700050206 (Mill Brook-Concord River)										
47	010700060901 (Headwaters Souhegan River)										
48	010700061102 (Spickett River)										
49	010700061201 (Salmon Brook)										
50	010700061202 (Stone Brook)										
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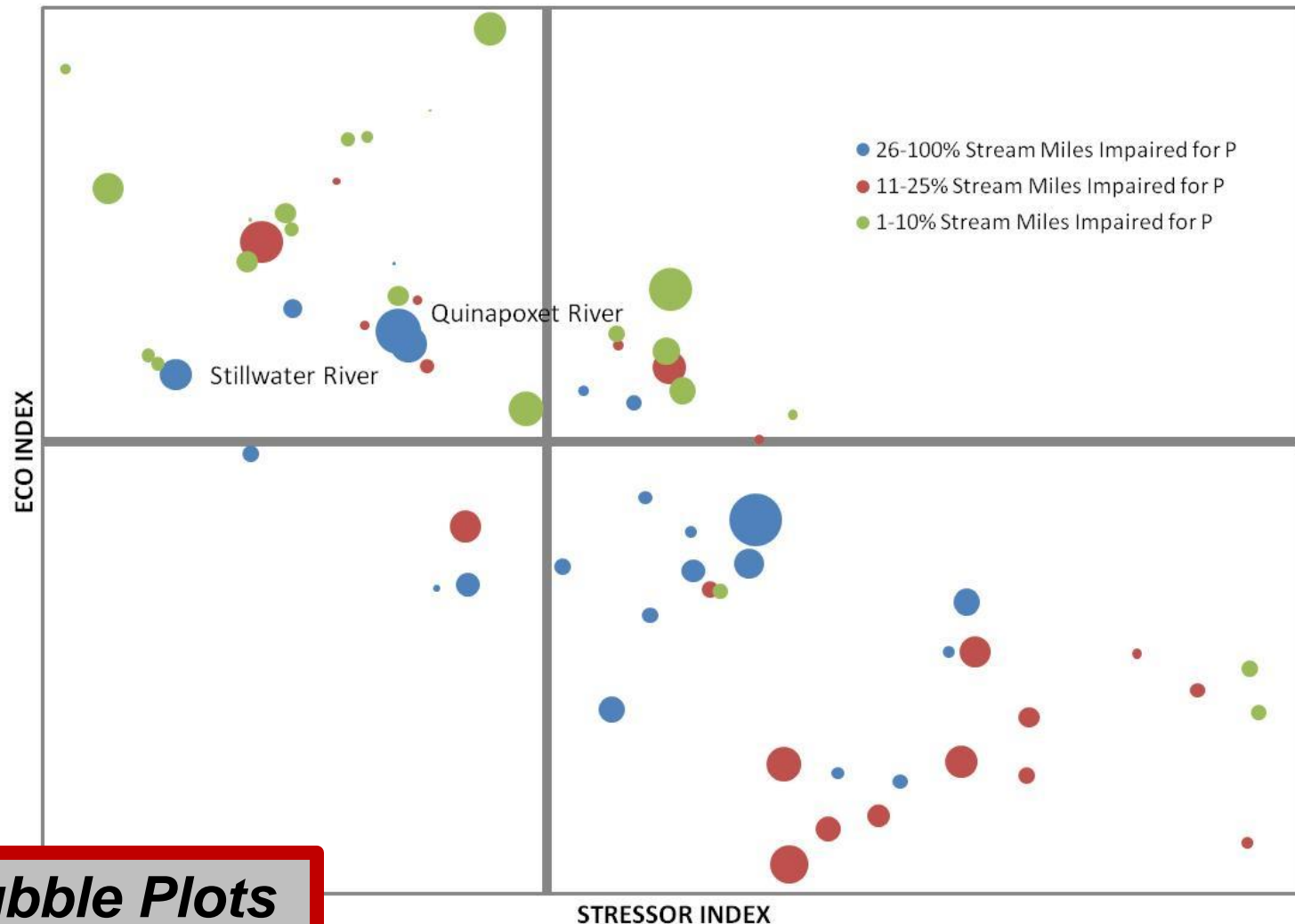
Requires only spreadsheet skills to run screenings, create RPS products

Three Types of Recovery Potential Screening Products

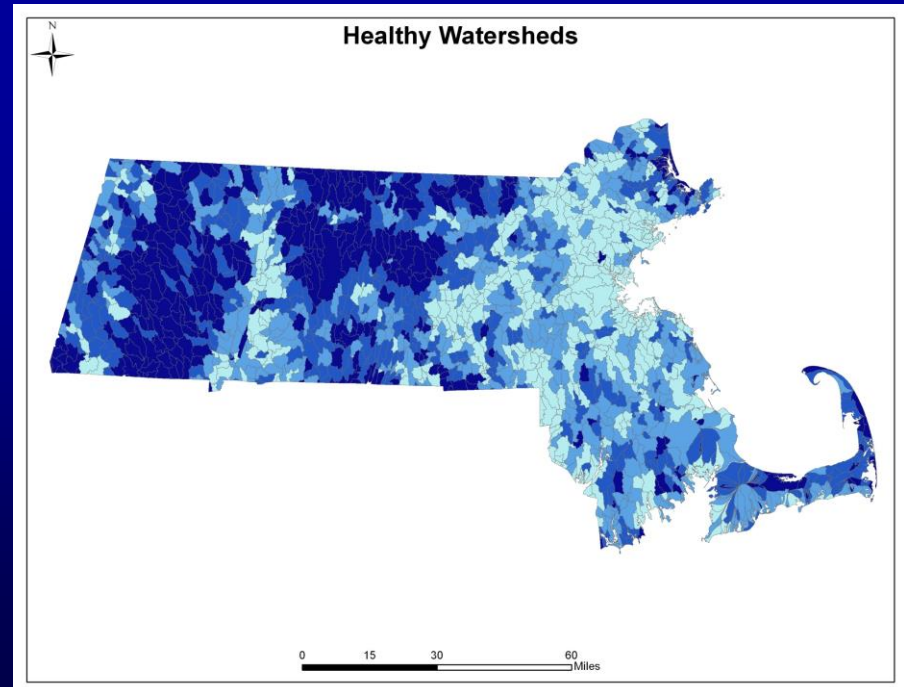
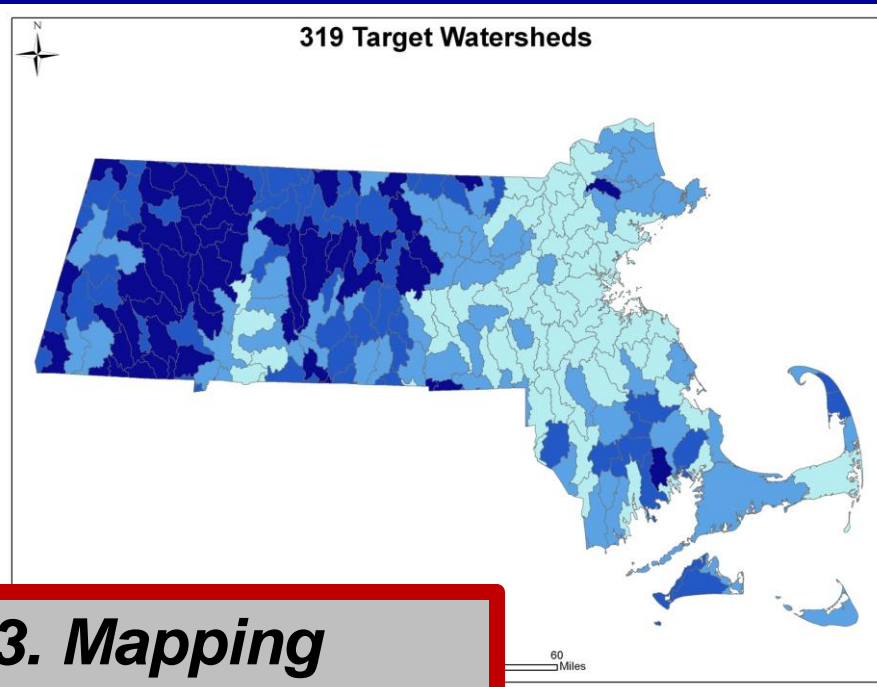
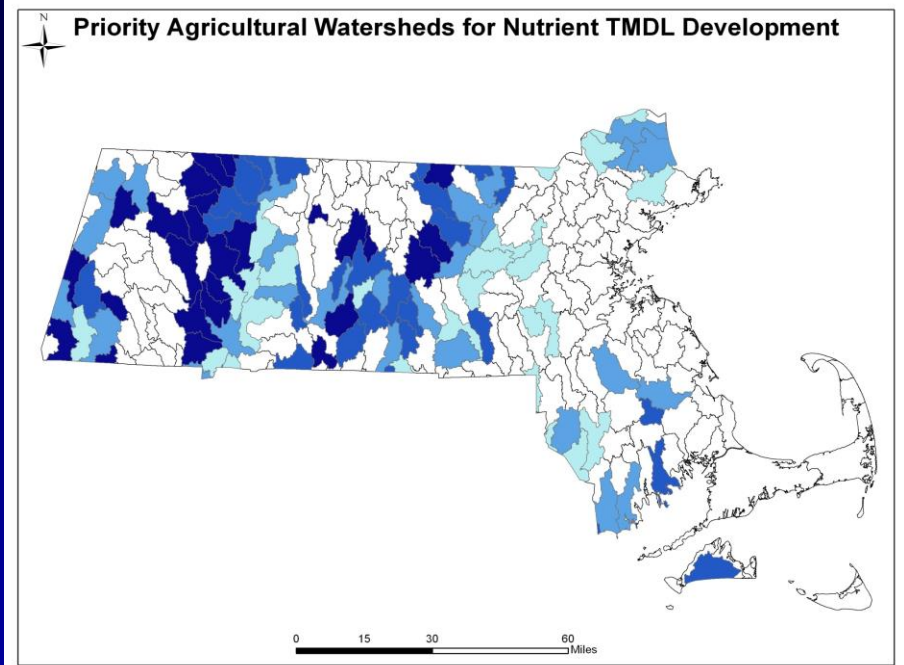
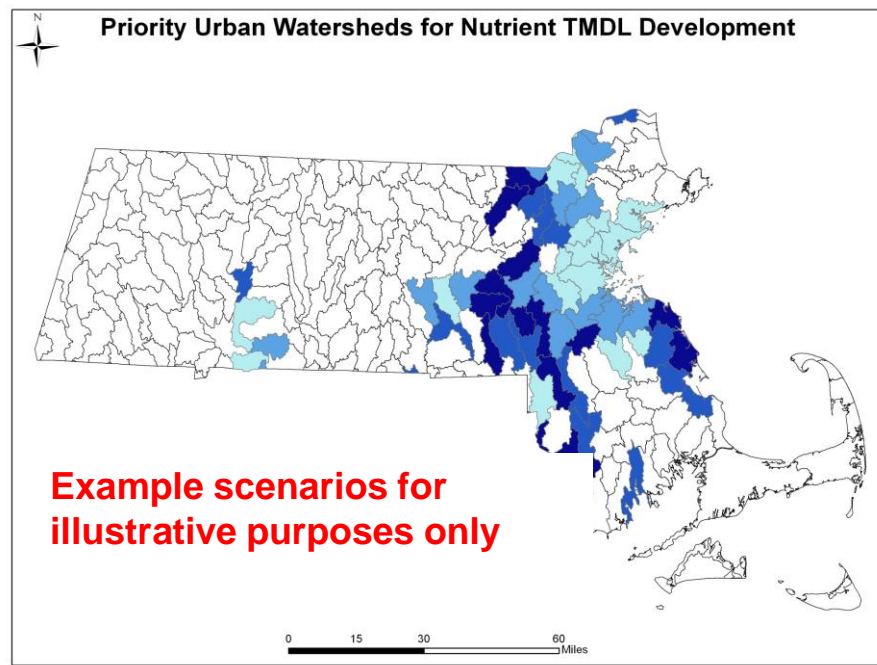
	A	B	C	D	E	F	G	H	I	J
1	HUC12 ID	Name	RPIScore	RPIRank	ECOINDEX	ECORANK	STRESSORINDEX	STRESSORRANK	SOCIALINDEX	SOCIALRANK
2	010802040104	Quabbin Reservoir-East Branch Swift River	12.3	1.0	67.3	22.0	7.0	3.0	18.8	20.0
3	010802070302	Valley Brook-East Branch Farmington	11.0	2.0	68.5	18.0	8.1	6.0	20.9	12.0
4	011000010301	Upper Fivemile River	10.6	3.0	67.9	20.0	6.5	1.0	1.7	225.0
5	020200060603	Wyomanock Creek	10.4	4.0	75.7	1.0	8.1	7.0	8.9	90.0
6	010802040106	Quabbin Reservoir-Swift River	10.1	5.0	69.4	15.0	8.8	14.0	19.6	16.0
7	010802060302	Cobble Mountain Reservoir	9.8	6.0	70.1	9.0	8.7	10.0	15.7	30.0
8	010802070301	Hubbard River	9.7	7.0	69.8	11.0	8.3	8.0	11.2	63.0
9	010802040103	East Branch Fever Brook	9.3	8.0	66.0	29.0	8.8	12.0	15.5	31.0
10	010900030204	Branch River	9.0	9.0	65.3	31.0	8.0	5.0	6.8	120.0
11	010802020202	Lawrence Brook	8.7	10.0	57.9	89.0	7.7	4.0	9.8	80.0
12	010802030105	Sherman Dam-Deerfield River	8.3	11.0	73.6	5.0	8.9	15.0	0.0	245.0
13	011000020103	Furnace Brook	8.2	12.0	70.8	8.0	11.1	29.0	20.1	14.0
14	010900020201	Pilgrim Lake	8.1	13.0	39.5	209.0	6.7	2.0	14.9	37.0
15	010802030202	Cold River	8.1	14.0	75.1	2.0	9.3	16.0	0.0	247.0
16	010802020102	Priest Brook	8.0	15.0	65.2	32.0	9.9	22.0	14.6	40.0
17	010900020204	Nauset Bay	8.0	16.0	39.4	210.0	8.7	11.0	30.4	2.0
18	020200030801	Headwaters Little Hoosic River	8.0	17.0	69.6	13.0	9.7	20.0	7.6	105.0
19	011000010401	Little River	7.8	18.0	63.6	44.0	10.8	27.0	20.4	13.0
20	010802040102	Headwaters East Branch Swift River	7.8	19.0	65.7	30.0	10.3	25.0	14.8	38.0
21	011000020203	Bigelow Brook	7.8	20.0	66.2	27.0	9.7	20.0	8.8	94.0
22	010900020503	Sakonnet Point-Frontal Rhode Island Sound	7.5	21.0	43.6	176.0	8.8	13.0	22.9	8.0
23	010900020203	Herring River	7.5	22.0	48.9	142.0	9.4	17.0	21.2	11.0
24	010802070204	Lower West Branch Farmington River	7.4	23.0	69.9	10.0	10.2	24.0	5.3	155.0
25	010802070102	Sandy Brook	6.8	24.0	64.5	36.0	9.5	19.0	0.1	243.0
26	010802040101	Headwaters Middle Branch Swift River	6.7	25.0	61.0	61.0	12.8	43.0	24.4	5.0
27	020200061002	Bash Bish Brook	6.6	26.0	58.2	86.0	9.4	18.0	4.3	181.0
28	011000050303	Blackberry River	6.5	27.0	60.7	64.0	9.7	20.0	2.3	215.0
29	010900030202	Clear River	6.4	28.0	61.4	58.0	11.4	33.0	11.8	59.0
30	010802060201	Upper West Branch Westfield River	6.4	29.0	69.5	14.0	11.4	32.0	2.9	206.0
31	010802060103	Dead Branch Westfield River	6.3	30.0	66.0	28.0	11.3	31.0	5.2	162.0

1. Rank Ordering

Phosphorus Impaired Streams to Target for TMDL Development



2. Bubble Plots



3. Mapping

Prioritization

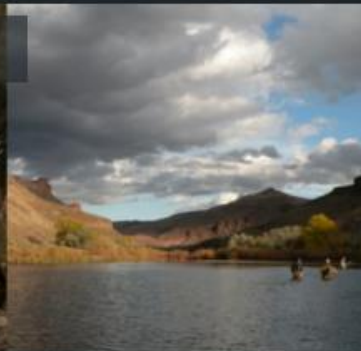
- Increased urgency for restoration and protection, with shrinking funding.
- Prioritization provides a framework for focusing the location and timing of TMDL development and other watershed restoration and protection actions.
- The recovery potential screening tool can help to inform data-driven decisions on where to invest efforts for the greater likelihood of success.

Recovery Potential Screening: Tools for Comparing Impaired Waters Restorability

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Watershed indicators, methods and tools



Featured Resources

- [Methods for Comparing Watersheds](#)
- [Downloadable RPS Tools for Anywhere in the Continental US](#)
- [Ecological, Stressor and Social Indicators of Watershed Condition](#)

Monitoring under the Clean Water Act has identified tens of thousands of polluted US water bodies that are in need of restoration. Many healthy waters without watershed protection strategies are also at risk of becoming polluted. This Recovery Potential Screening (RPS) website provides technical tools and methods to help government and private programs compare watersheds and plan their efforts for greater likelihood of restoration and protection success. RPS users during the past ten years have included over 20 state water quality programs, local watershed groups, river basin managers (US and international), tribes and federal environmental agencies.

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Library of Watershed Indicators

[Indicators Overview](#)

[Ecological Indicators](#)

[Stressor Indicators](#)

[Social Indicators](#)

RPS Website: www.epa.gov/rps