

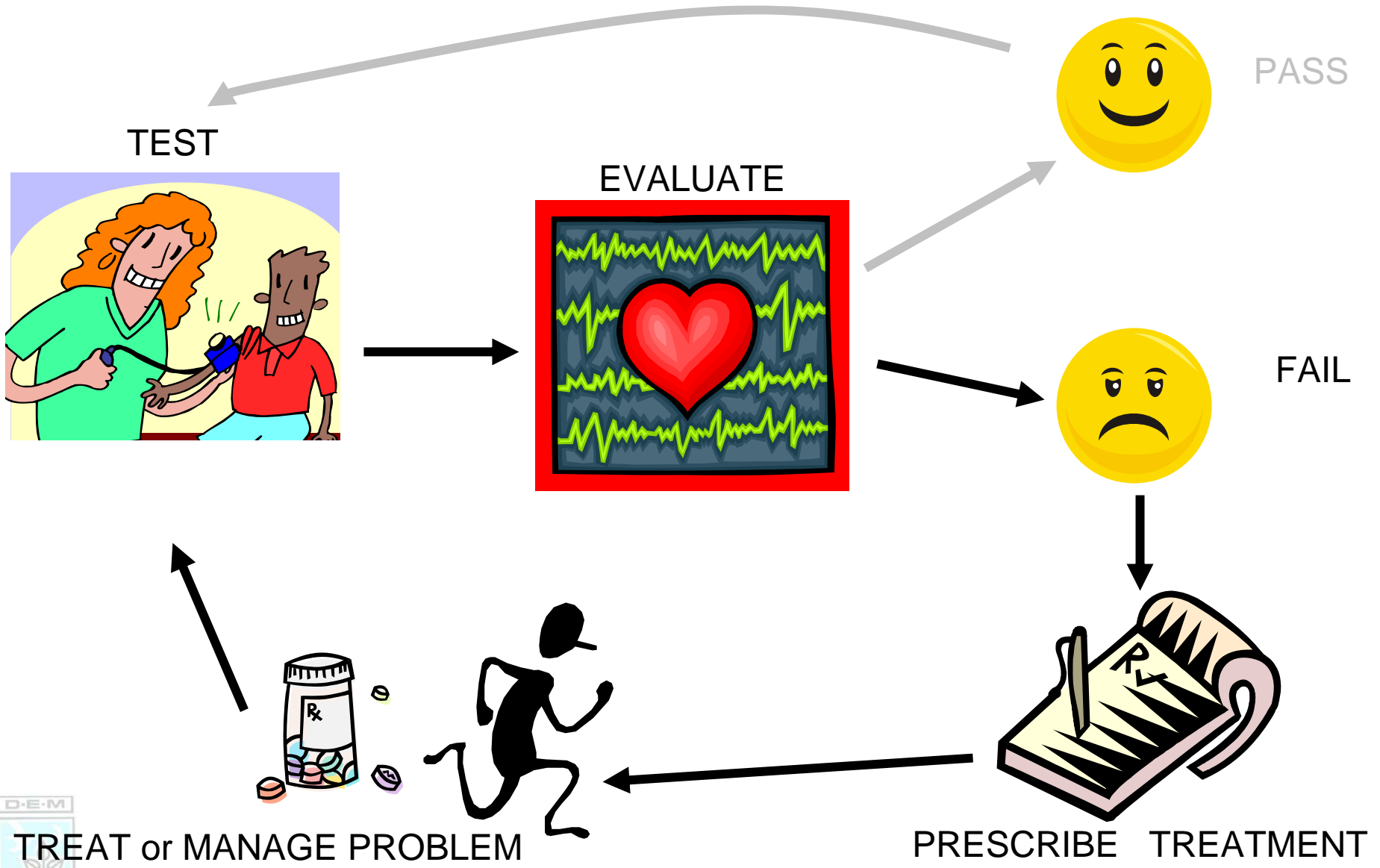
Using the Watershed Check-up to Support Water Quality Protection and Improvement

2013 Land and Water Summit
Session 2-B

Katie DeGoosh



Monitoring: An annual check-up



Water monitoring: An annual check up

OWR & federal Clean Water Act process

TEST

EVALUATE

PASS

'Fully Supporting'



'ASSESS'

FAIL

'IMPAIRED'



"303d list"

PRESCRIBE TREATMENT

'TMDL: RESTORATION PLAN'

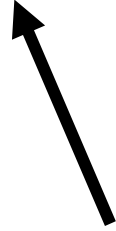
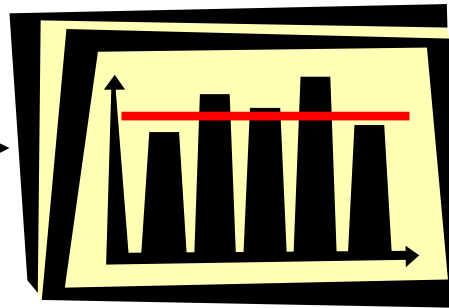


TREAT PROBLEM

'IMPLEMENT BMP'



'MONITOR'



Today's Outline

1. Monitoring/check-up : Clean Water Act Process
2. RI Water Monitoring Strategy & RIDEM OWR
3. Data availability and “assessment reporting”
4. Integrated Report Assessment Categories
5. Impaired Waters & TMDL Restoration Plans
6. Using categories to support WQ protection
7. Using categories to support WQ improvement



Today's Outline

1. Monitoring/check-up : Clean Water Act Process

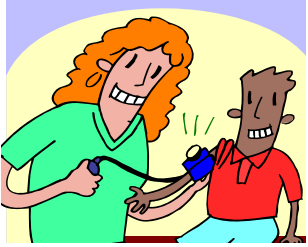


Monitoring/check-up : Clean Water Act Process

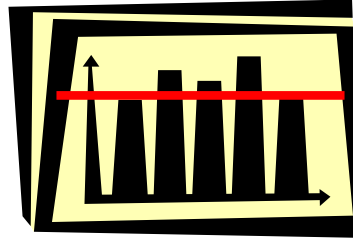
TEST: MONITORING

INDICATORS / STANDARDS

ASSESS SYSTEM / USE



cuff



Blood pressure



Cardiac / pump



hammer



reflex



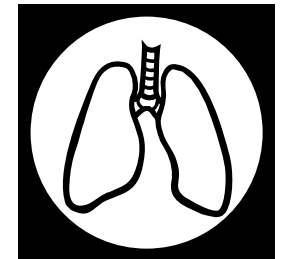
Nervous / motor control



stethoscope



breath



Respiratory / breathing

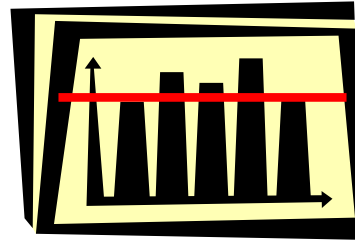


Monitoring/check-up : Clean Water Act Process

TEST: MONITORING



water sample



pathogens / bacteria



Recreation



bug, plant, water samples



macro invertebrate community
aquatic plant community
water chemistry



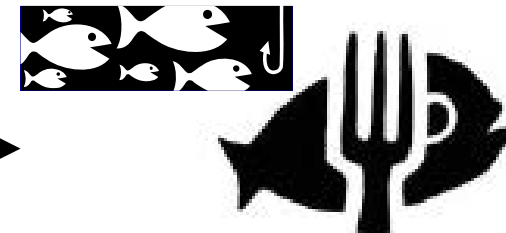
Aquatic Life



Electro-shocking



Mercury in fish tissue



Fish Consumption

More info : Clean Water Act Process & OWR



<http://www.dem.ri.gov/programs/benviron/water/index.htm>

MONITORING (coming soon!)

<http://www.dem.ri.gov/programs/benviron/water/quality/surfwq/monitoringindex.htm>

WATER QUALITY STANDARDS (uses) AND ASSESSMENTS

<http://www.dem.ri.gov/programs/benviron/water/quality/surfwq/index.htm>



Today's Outline

1. Monitoring/check-up : Clean Water Act Process
2. RI Water Monitoring Strategy & RIDEM OWR



RI Water Monitoring Strategy



MONITORING

State of Rhode Island and Providence Plantations Water Monitoring Strategy

2005-2010



September 30, 2005

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
235 Promenade Street
Providence, RI 02908
(401) 222-4700
www.dem.ri.gov



RI Water Monitoring Strategy

FRESH WATER



MONITORING

-Lakes and Ponds

(URI Watershed Watch: water quality)

-Large Non-wadeable Rivers

(USGS: water quality)

-Wadeable Streams

(RIDEM: water quality and macroinvertebrates)

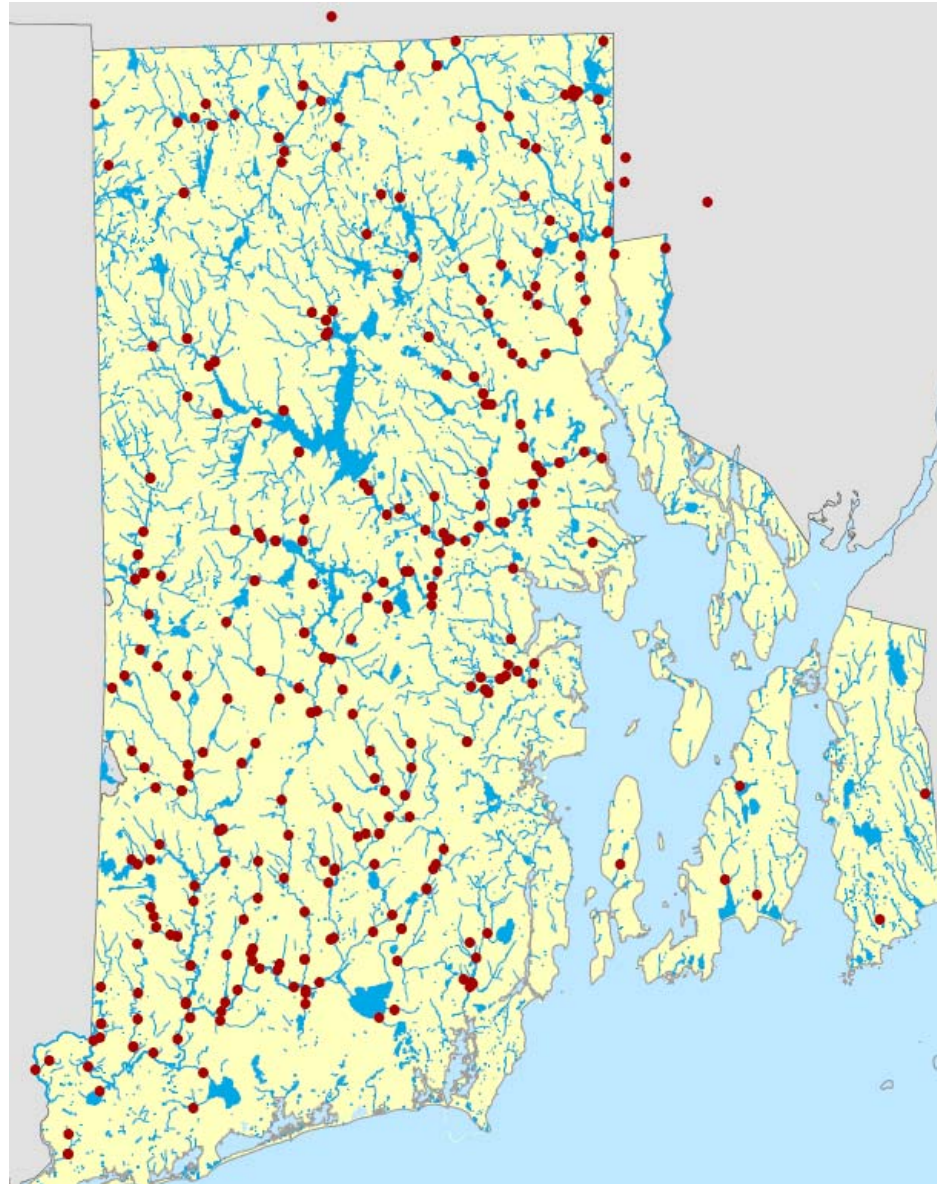
-Aquatic Invasive Species

(RIDEM)



OWR Wadeable Stream Monitoring

Established 300+ stations state wide since 2004



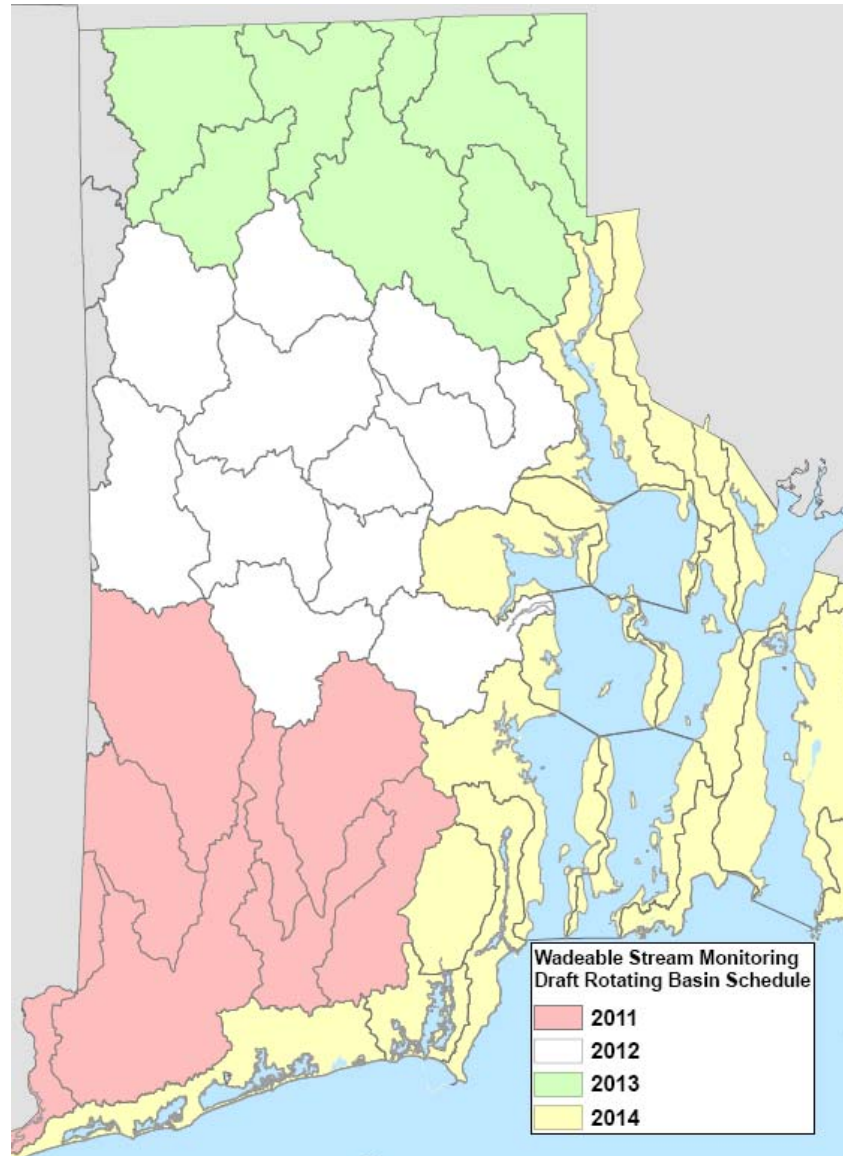
OWR Wadeable Stream Monitoring

2004-09 Pilot Rotating Basin Approach (5 Years)









OWR Wadeable Stream Monitoring

2011-14 Draft Rotating Basin Approach



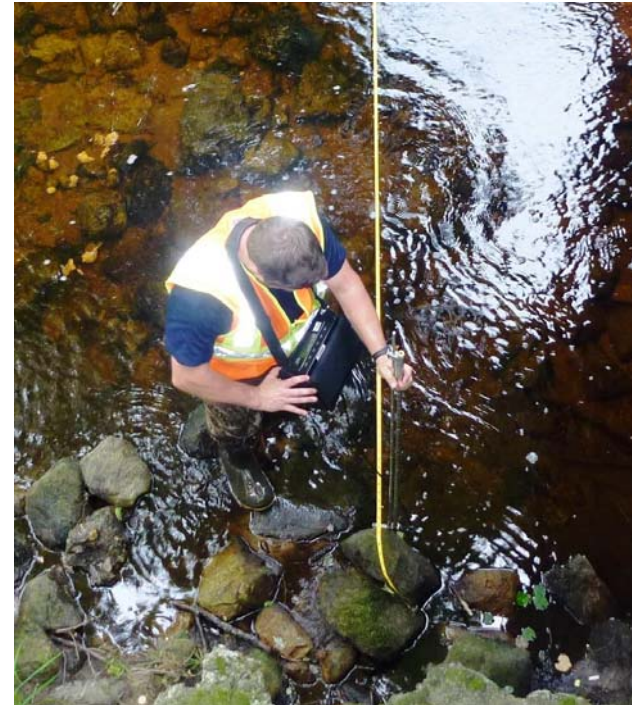
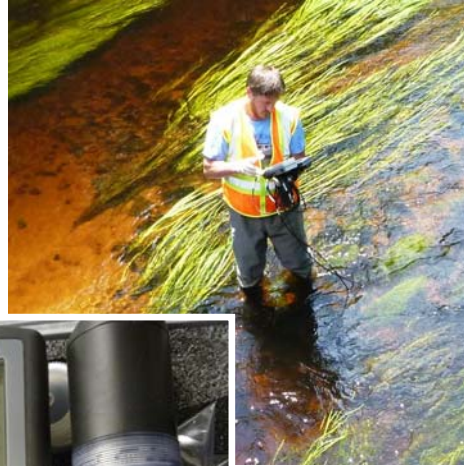
OWR Wadeable Stream Monitoring

<u>Use</u>	<u>Indicators</u>	Month				
		<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>
	Lab: Bacteria / pathogens	X	X	X	X	X
	Field: Oxygen, Conductivity, pH	X	X	X	X	X
	Lab: Conventional Water Quality	X			X	X
	Lab: Metals	X			X	X
	Macroinvertebrate - bugs					
	Aquatic Invasive Species					



OWR Wadeable Stream Monitoring

Water Quality Sampling





“Ambient River Monitoring (ARM) Program”

<http://www.dem.ri.gov/pubs/qapp/ambirivr2.pdf>



Ambient River Monitoring (ARM) Program

<u>Use</u>	<u>Indicators</u>	Month				
		<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>
	Lab: Bacteria / pathogens	X	X	X	X	X
	Field: Oxygen, Conductivity, pH	X	X	X	X	X
	Lab: Conventional Water Quality	X			X	X
	Lab: Metals	X			X	X
	Macroinvertebrate - bugs					
	Aquatic Invasive Species					



Ambient River Monitoring (ARM) Program

RI Ambient River Monitoring QAPP
Date: December 2010

I. PROJECT MANAGEMENT

1. Title and Approval Page

Quality Assurance Project Plan for Rhode Island Ambient River Monitoring Program

State of Rhode Island and Providence Plantations
Rhode Island Department of Environmental Management (DEM)
Office of Water Resources

December 2010

USEPA Project Manager Katrina Kipp

Signature/Date *Katrina Kipp* 1/4/11

USEPA QA Officer Stephen DiMattei

Signature/Date *Stephen DiMattei* 01-04-11

RIDEM Program Manager Susan Kieman

Signature/Date *Susan Kieman* 01-13-11

RIDEM Project Manager Katie DeGoosh

Signature/Date *Katie DeGoosh* 1-10-11

Page 1 of 42

2011 ADDENDUM

to update the Quality Assurance Project Plan for Rhode Island Ambient River Monitoring Program

State of Rhode Island and Providence Plantations
Rhode Island Department of Environmental Management (DEM)
Office of Water Resources

December 1, 2011

RIDEM Project Manager: Katie DeGoosh

Signature/Date: _____

 **Quality Assurance Project Plans (and yearly addendums)**

<http://www.dem.ri.gov/pubs/qapp/ambirivr2.pdf>

OWR Wadeable Stream Monitoring

Macro-invertebrate (bug) Sampling








“Macroinvertebrate Biomonitoring in Wadeable Streams”

<http://www.dem.ri.gov/pubs/qapp/taxbenth.pdf>



Macro-invertebrate (bug) Sampling

<u>Use</u>	<u>Indicators</u>	Month				
		<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>
	Lab: Bacteria / pathogens	X	X	X	X	X
	Field: Oxygen, Conductivity, pH	X	X	X	X	X
	Lab: Conventional Water Quality	X			X	X
	Lab: Metals	X			X	X
	Macroinvertebrate - bugs					
	Aquatic Invasive Species					

Macro-invertebrate (bug) Sampling QAPP



**Quality Assurance
Project Plan**

**FOR TAXONOMIC IDENTIFICATION OF
BENTHIC MACROINVERTEBRATES,
RHODE ISLAND**

PREPARED FOR
Rhode Island Department
of Environmental Management
Office of Water Resources
235 Promenade Street
Providence, Rhode Island 02907


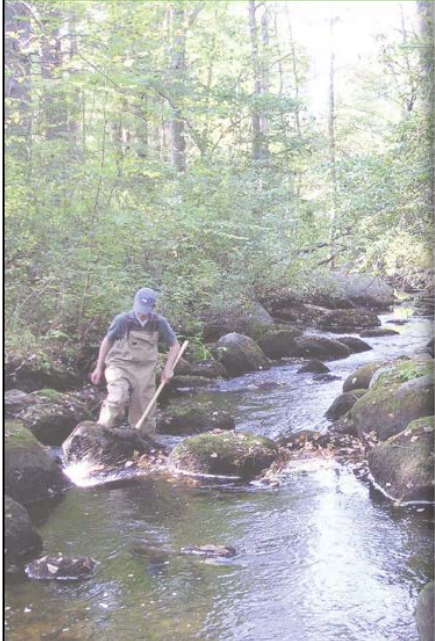
PREPARED BY
ESS Group, Inc.
401 Wampanoag Trail, Suite 400
East Providence, Rhode Island 02915


Project No. R298-005

January 8, 2007

**BIOMONITORING AND HABITAT ASSESSMENT
RHODE ISLAND WADEABLE STREAMS**

2006 DATA REPORT
RIDEM REQ. NO. R74A070752



Prepared by:

ESS Group, Inc.
401 Wampanoag Trail, Suite 400
East Providence, RI 02915

Prepared for:
Rhode Island Department of
Environmental Management
Office of Water Resources
235 Promenade Street
Providence, RI 02907

<http://www.dem.ri.gov/pubs/qapp/taxbenth.pdf>



OWR Wadeable Stream Monitoring






Aquatic Invasive Species Mapping



Presence noted at ARM monitoring stations

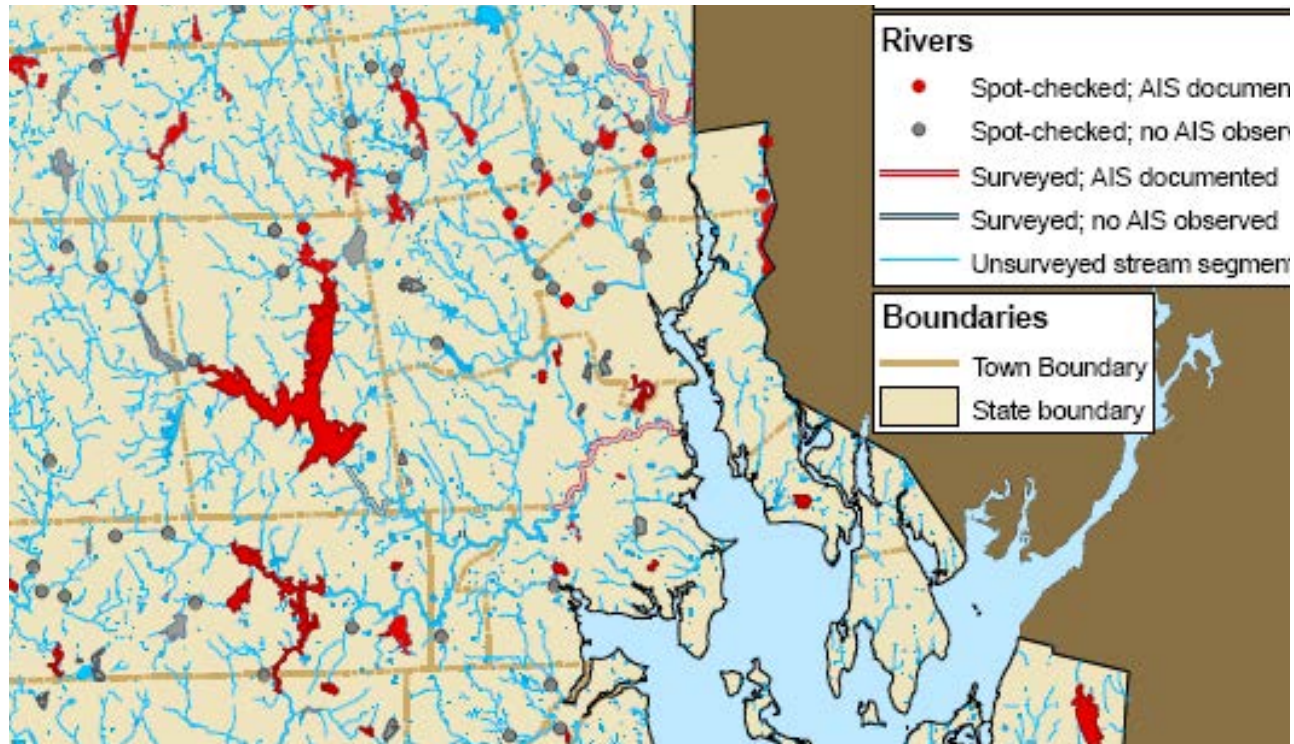


Aquatic Invasive Species Sampling

<u>Use</u>	<u>Indicators</u>	Month				
		<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>
	Lab: Bacteria / pathogens	X	X	X	X	X
	Field: Oxygen, Conductivity, pH	X	X	X	X	X
	Lab: Conventional Water Quality	X			X	X
	Lab: Metals	X			X	X
	Macroinvertebrate - bugs					
	Aquatic Invasive Species					



Aquatic Invasive Species Mapping



Maps available at:

<http://www.dem.ri.gov/programs/benviron/water/quality/surfwq/aisplant.htm#inri>



Today's Outline

1. Monitoring/check-up : Clean Water Act Process
2. RI Water Monitoring Strategy & RIDEM OWR
3. Data availability and “assessment reporting”



Ambient River Monitoring (ARM) Program - QAPPs

RI Ambient River Monitoring QAPP
Date: December 2010

I. PROJECT MANAGEMENT

1. Title and Approval Page

**Quality Assurance Project Plan for
Rhode Island Ambient River Monitoring Program**

State of Rhode Island and Providence Plantations
Rhode Island Department of Environmental Management (DEM)
Office of Water Resources

December 2010

USEPA Project Manager Katrina Kipp

Signature/Date *Katrina Kipp* 1/4/11

USEPA QA Officer Stephen DiMattei

Signature/Date *Stephen DiMattei* 01-04-11

RIDEM Program Manager Susan Kieman

Susan Kieman 01-13-11

2011 ADDENDUM

to update the

**Quality Assurance Project Plan for
Rhode Island Ambient River Monitoring Program**

State of Rhode Island and Providence Plantations
Rhode Island Department of Environmental Management (DEM)
Office of Water Resources

December 1, 2011

Table 14. Ambient River Monitoring Stations 2012: Water Chemistry Suites^A analyzed by HEALTH

Station ID, river name, GPS location, dates and chemistry parameter suites collected at each station for 2012 RIDEM – ARM Program.

See Table 15 for explanation of analytical methods for conventionals, nutrients, dissolved (*dM*) and total metals (*tM*), pathogens, and Chl *a*.

Station ID	River Name	Latitude	Longitude	"May" event	"June" event	"July" event	"August" event	"Sept." event
				Late May - 6/20/12	Late June - 8/14/12	Late Aug. - 9/13/12	Late Sept. - 10/22/12	Late Oct - December
BGR01	Bear Brook & Tribs	41.66020	-71.62809	S1	P1	P1	S1	S1
BGR05	Congdon River & Tribs	41.61220	-71.62275	S1	P1+ Chl <i>a</i> 1	P1+ Chl <i>a</i> 1	S1 + Chl <i>a</i> 1	S1 + Chl <i>a</i> 2
BGR08	Carr River & Tribs	41.64333	-71.60792	S1 + <i>dM</i> + Fe	P1	P1	S1 + <i>dM</i> + Fe	S1 + <i>dM</i> + Fe
BGR09	Nooseneck River & Tribs	41.62662	-71.63248	S1	P1	P1	S1	S1
BGR10	Big River & Tribs	41.64473	-71.61281	S1	P1	P1	S1	S1
FL01	Boyd Brook	41.71496	-71.63008	S1	P1	P1	S1	S1
FL03	Flat River & Tribs	41.71453	-71.65203	S1	P1+ Chl <i>a</i> 1	P1+ Chl <i>a</i> 1	S1 + Chl <i>a</i> 1	S1 + Chl <i>a</i> 2



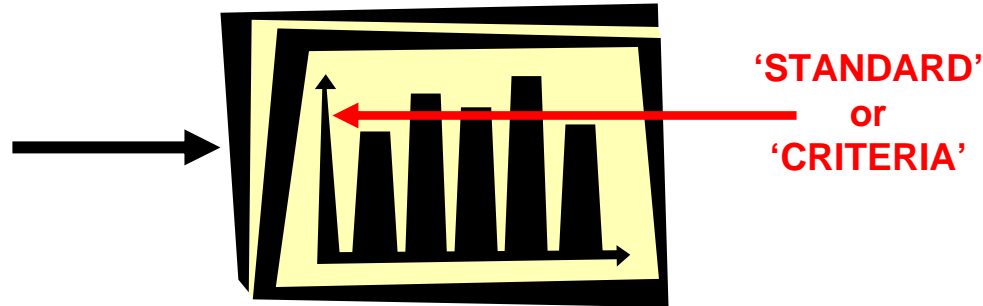
Monitoring & Assessments: RIDEM Office of Water per requirements of the Federal Clean Water Act

TEST



'MONITOR'

EVALUATE



'ASSESS'

WATER QUALITY STANDARDS (uses) AND ASSESSMENTS

<http://www.dem.ri.gov/programs/benviron/water/quality/surfwq/index.htm>



Monitoring & Assessments: RIDEM Office of Water per requirements of the Federal Clean Water Act

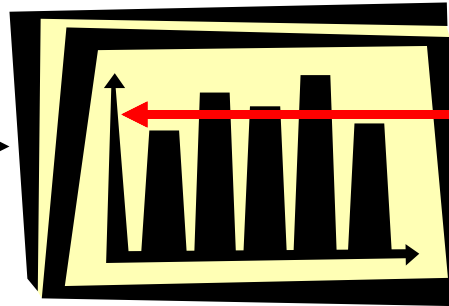
TEST



'MONITOR'

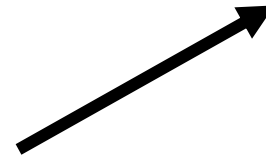


EVALUATE



'ASSESS'

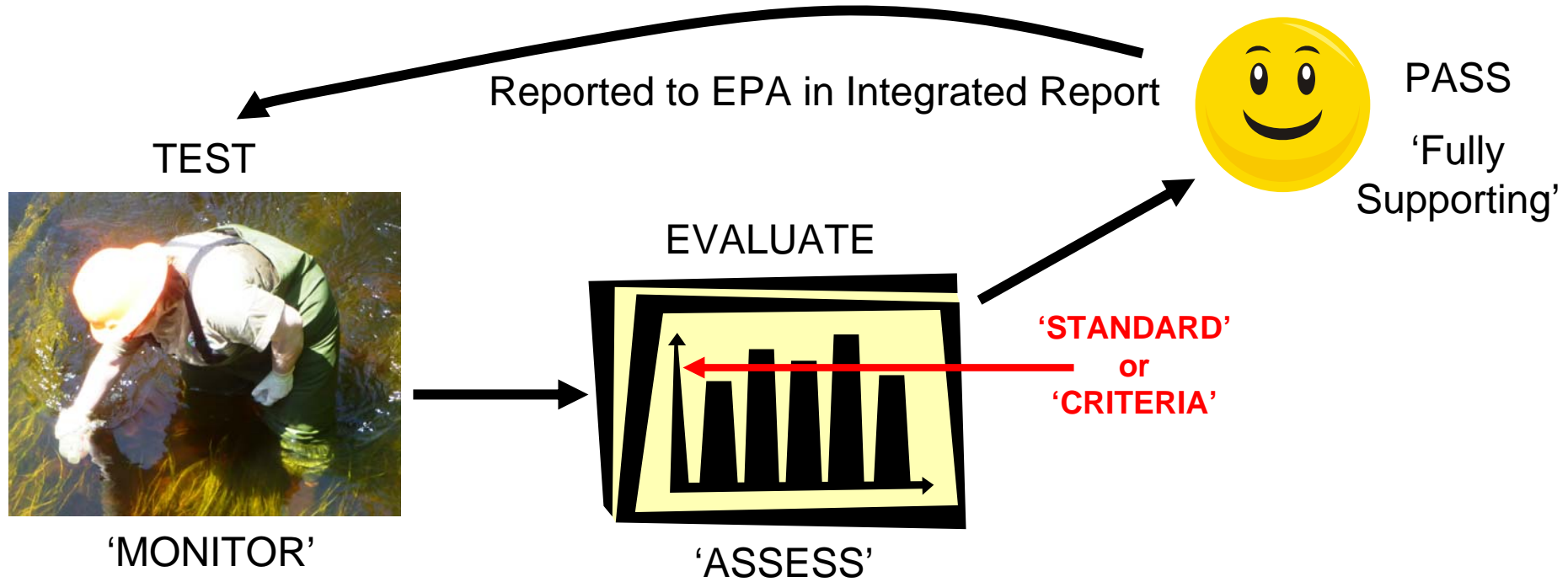
'STANDARD'
or
'CRITERIA'



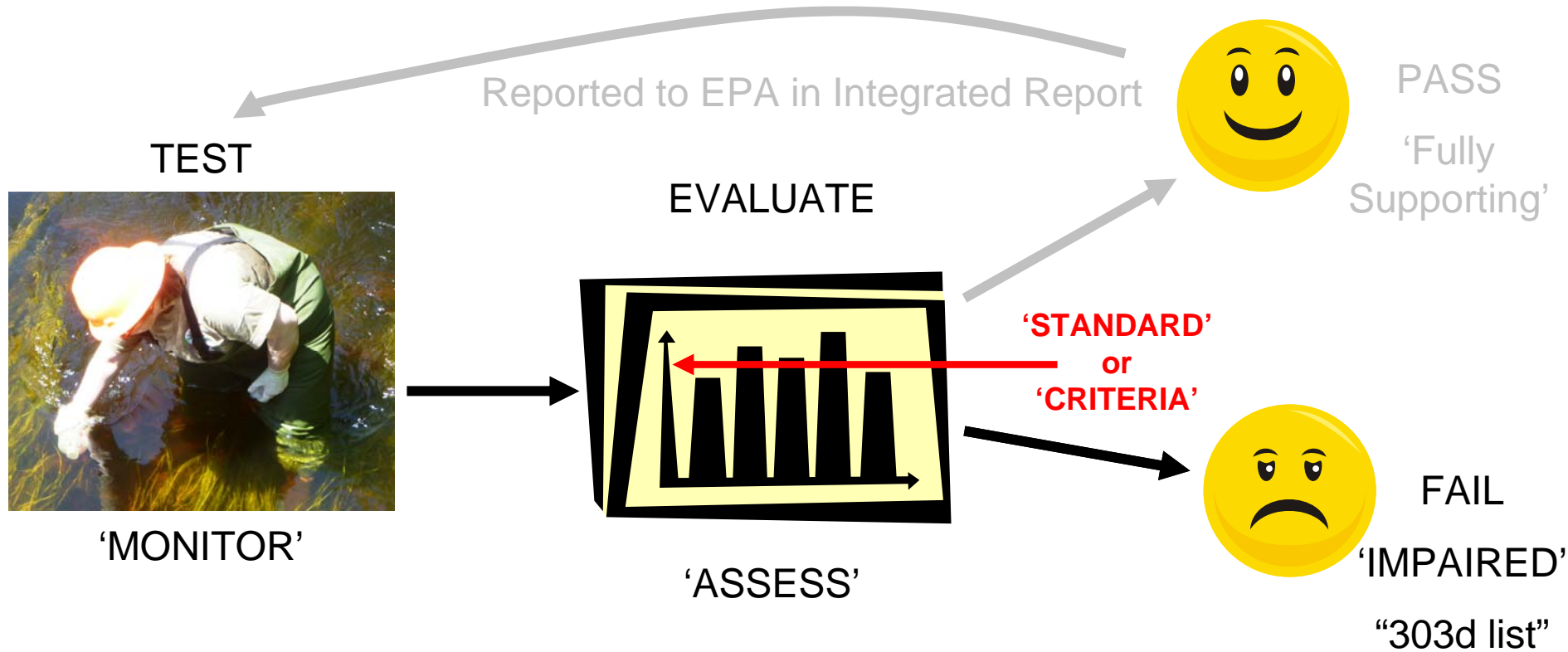
PASS
'Fully Supporting'



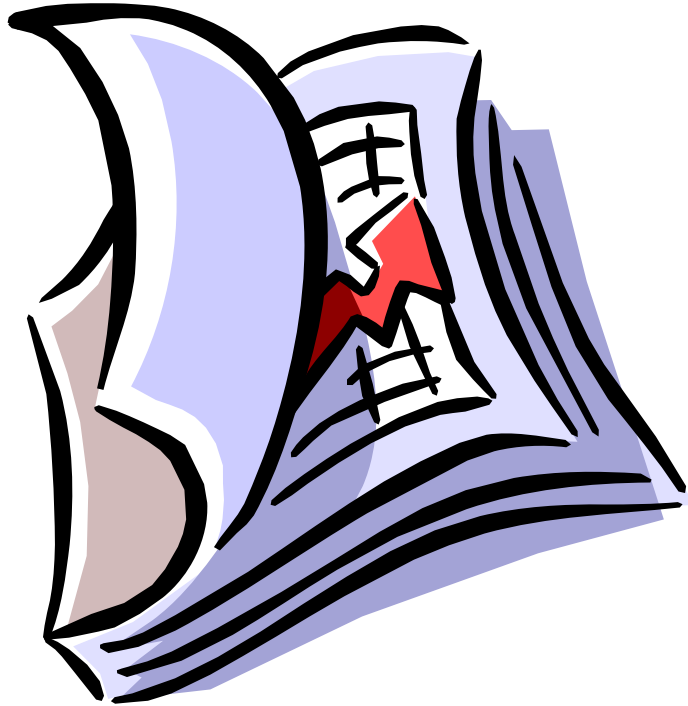
Monitoring & Assessments: RIDEM Office of Water per requirements of the Federal Clean Water Act



Monitoring & Assessments: RIDEM Office of Water per requirements of the Federal Clean Water Act



Assessment Reporting: RIDEM Office of Water per requirements of the Federal Clean Water Act



“Integrated Report”

Integrated Water Quality Monitoring and Assessment Report (305b/303d)

- Assesses all waterbodies for all uses
- reported to EPA every two years (formerly State of the State’s Waters report)



<http://www.dem.ri.gov/pubs/305b/index.htm>

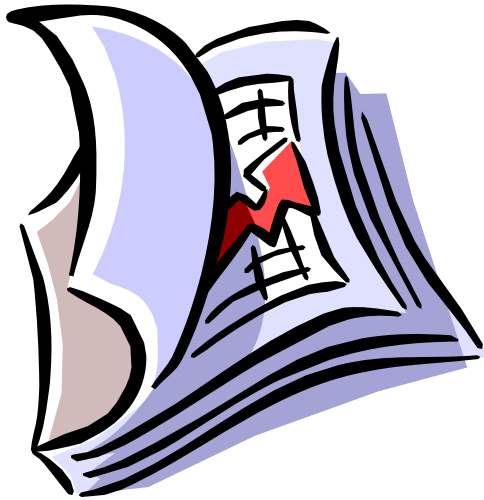


Today's Outline

1. Monitoring/check-up : Clean Water Act Process
2. RI Water Monitoring Strategy & RIDEM OWR
3. Data availability and “assessment reporting”
4. Integrated Report Assessment Categories



Integrated Report Assessment Categories



1 Fully Support All Uses



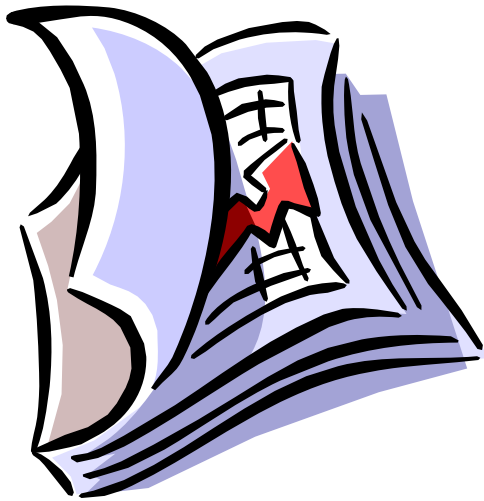
2 Fully Support Some Uses



3 No Monitoring Data



Integrated Report Assessment Categories



1 Fully Support All Uses



2 Fully Support Some Uses



3 No Monitoring Data

4a. Use impaired and TMDL done

b. Use impaired but other plan

c. Use impaired by non-pollutant



5 One or more use is impaired
and a TMDL is needed



Integrated Report Assessment Categories

What category is my stream in?



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

2010 INTEGRATED WATER QUALITY MONITORING
AND ASSESSMENT REPORT

Section 305(b) State of the State's Waters Report
And
Section 303(d) List of Impaired Waters



Bookmark

Signatures

Pages

Model Tree

- Cover Page
- Table of Contents
 - List of Tables
 - List of Figures
- Executive Summary
- Chapter 1 Integrated Report Overview
- Chapter 2 Background Information
- Chapter 3 Surface Water Monitoring and Ass
- Chapter 4 Groundwater Assessments
- Chapter 5 Public Participation
- Appendix A. 2010 Index of Waterbodies and
- Appendix B. 2010 Category 1 Waters**
- Appendix C. 2010 Category 2 Waters
- Appendix D. 2010 Category 3 Waters
- Appendix E. 2010 Category 4A Waters
- Appendix F. 2010 Category 4C Waters
- Appendix G. 2010 Category 5 Waters - 303(c)

2010 Category 1 Waters

Waters Fully Supporting All their Designated Uses

Coastal Waters

Gilbert Stuart Stream RI0010044R-01 Waterbody Size: 0.212 M

Use Description

Use Attainment Status

Fish and Wildlife habitat	Fully Supporting
Fish Consumption	Fully Supporting
Primary Contact Recreation	Fully Supporting
Secondary Contact Recreation	Fully Supporting

Great Salt Pond RI0010046E-01B Waterbody Size: 0.57 S

Use Description

Use Attainment Status

RHODE ISLAND DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
www.dem.ri.gov



Integrated Report

<http://www.dem.ri.gov/pubs/305b/index.htm>

Integrated Report Assessment Categories

What category is my stream in?

<http://204.139.0.188/website/maps/viewer.htm>



1. Check box and fill in circle on the right under “LAYERS” for stream or pond WQ Assessment

2. Zoom in to your location of interest (use magnifying tool to drag a box around area)

3. Click on the red “i” button on the left side toolbar, and then click on your waterbody

4. Find the column named CAT or CAT2010 (lastest year)

WBID	Strm_Ord	SRPW	asssd	Cold	System	RivMiles	AsmntBasn	HSI	StrmFlow	Shape_Leng	Label	WQS2010	CAT2010
RI0008040R-15	2	0	yes	Cold	Roaring Brook	1.77248202929	8	1		9358.70511464	8040R-15	B	2



Integrated Report Assessment Categories

What category is my stream in?

<http://204.139.0.188/website/maps/viewer.htm>



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Stream WQ Assessment

WBID	Strm_Ord	SRPW	assd	Cold	System	RivMiles	AsmntBasn	HSI	StrmFlow	Shape_Leng	Label	WQS2010	CAT2010
RI0008040R-15	2	0	yes	Cold	Roaring Brook	1.77248202929	8	1		9358.70511464	8040R-15	B	2



Integrated Report Assessment Categories



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3. Click on the red “i” button on the left side toolbar, and then click on your waterbody

4. Find the column named CAT or CAT2010 (lastest year)

Environmental Resource Map

LAYERS

- All Layers
- Drinking Water Supplies
- Elevation
- Image Layers
- Groundwater Features
- Geology
- Land Use and Cover
- Outdoor Recreation
- Political Boundaries
- Regulatory Overlays
- Rhode Island Grown
- Soil
- Surface Water Features
- Transportation
- US EPA Regulated Facilities
- Waste Management
- Water Quality and Impairments
 - SRPW Stream
 - SRPW Pond
 - SRPW Wetland
 - RIPDES Discharge Outfalls
 - Estuary WQ Standard
 - Pond WQ Standard
 - Stream WQ Standard
 - Estuary WQ Assessment
 - Pond WQ Assessment
 - Stream WQ Assessment
 - Cold Water Fishery - Stream
 - Cold Water Fishery - Pond
 - Groundwater Classification
 - Shellfish Harvest Restriction A
 - CRMC Water Use Class

Stream WQ Assessment

WBID	Strm_Ord	SRPW_assd	Cold	System	RivMiles	AsmntBasn	HSI	StrmFlow	Shape_Leng	Label	WQS2010	CAT2010
RI0008040R-15	2	0	yes	Cold	Roaring Brook	1.77248202929	8	1	9358.70511464	8040R-15	B	2

Visible Features

Help:

- A closed group, click to open.
- An open group, click to close.
- A main layer, click the layer name for description.

Today's Outline

1. Monitoring/check-up : Clean Water Act Process
2. RI Water Monitoring Strategy & RIDEM OWR
3. Data availability and “assessment reporting”
4. Integrated Report Assessment Categories
5. Impaired Waters & TMDL Restoration Plans



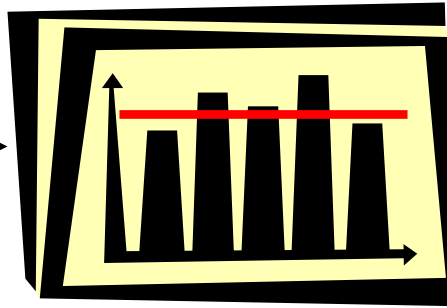
Impaired Waters & TMDL Restoration Plans per requirements of the Federal Clean Water Act

TEST



'MONITOR'

EVALUATE



'ASSESS'



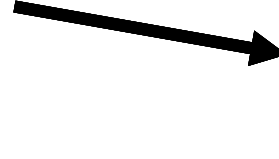
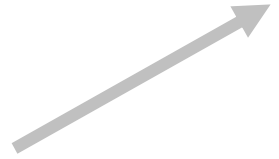
PASS
'Fully Supporting'



FAIL
'IMPAIRED'
"303d list"



PRESCRIBE TREATMENT
'TMDL: RESTORATION PLAN'



Impaired Waters & TMDL Restoration Plans per requirements of the Federal Clean Water Act

- Plan for waterbodies with an impaired use
- Set water quality goals for restoration
- Identify pollutant sources (NPS and PS)
- Quantifies pollutant amounts (loads)
- Allocates “allowable” amount of pollutants
- Establishes pollution abatement requirements (PS)
- Recommends restoration (NPS)

<http://www.dem.ri.gov/programs/benviron/water/quality/rest/index.htm>



Impaired Waters & TMDL Restoration Plans per requirements of the Federal Clean Water Act

Rhode Island Statewide Total Maximum Daily Load (TMDL) for Bacteria Impaired Waters



September 2011

TMDL and Water Quality Restoration Plan Documents

Click on the highlighted segment(s) to view a TMDL document (in PDF format) or to e-mail the contact person for each project. You may also call the project contact at (401) 222-4700. The tables below include both [Draft](#) and [EPA Approved](#) TMDL documents and are arranged by sub-basin.

Draft Documents

[Providence](#) * [Blackstone River Basin](#) * [Coastal Waters](#) * [Moshassuck River Basin](#) * [Narragansett Basin](#) * [Pawcatuck River Basin](#) * [Pawtucket River Basin](#) * [Ten Mile River Basin](#) * [Woonasquettus River Basin](#)

If you require the [Free Acrobat Reader software](#) [Click Here](#)

Impaired Water	Impairment / Pollutant	TMDL Status	Contact
Statewide			
No Draft TMDL Plans at this time.			
Blackstone River Basin			
Blackstone River Watershed	Fecal Coliform Enterococci	Accepting comments through 12/7/12	Ron Vlasco
Cherry Brook	Cadmium		
Mill River	Copper		
Pettus River	Lead		
Data Summary and Appendices (WV Field Report & Response to Comments)			
Coastal Waters			
No Draft TMDL Plans at this time.			
Moshassuck River Basin			
No Draft TMDL Plans at this time.			
Narragansett Basin			
No Draft TMDL Plans at this time.			
Pawtucket River Basin			
No Draft TMDL Plans at this time.			
Ten Mile River Basin			
No Draft TMDL Plans at this time.			
Thames River Basin			
No Draft TMDL Plans at this time.			
Woonasquettus River Basin			
No Draft TMDL Plans at this time.			

EPA Approved TMDL Documents

[Providence](#) * [Blackstone River Basin](#) * [Coastal Waters](#) * [Moshassuck River Basin](#) * [Narragansett Basin](#) * [Pawcatuck River Basin](#) * [Pawtucket River Basin](#) * [Ten Mile River Basin](#) * [Thames River Basin](#) * [Woonasquettus River Basin](#)

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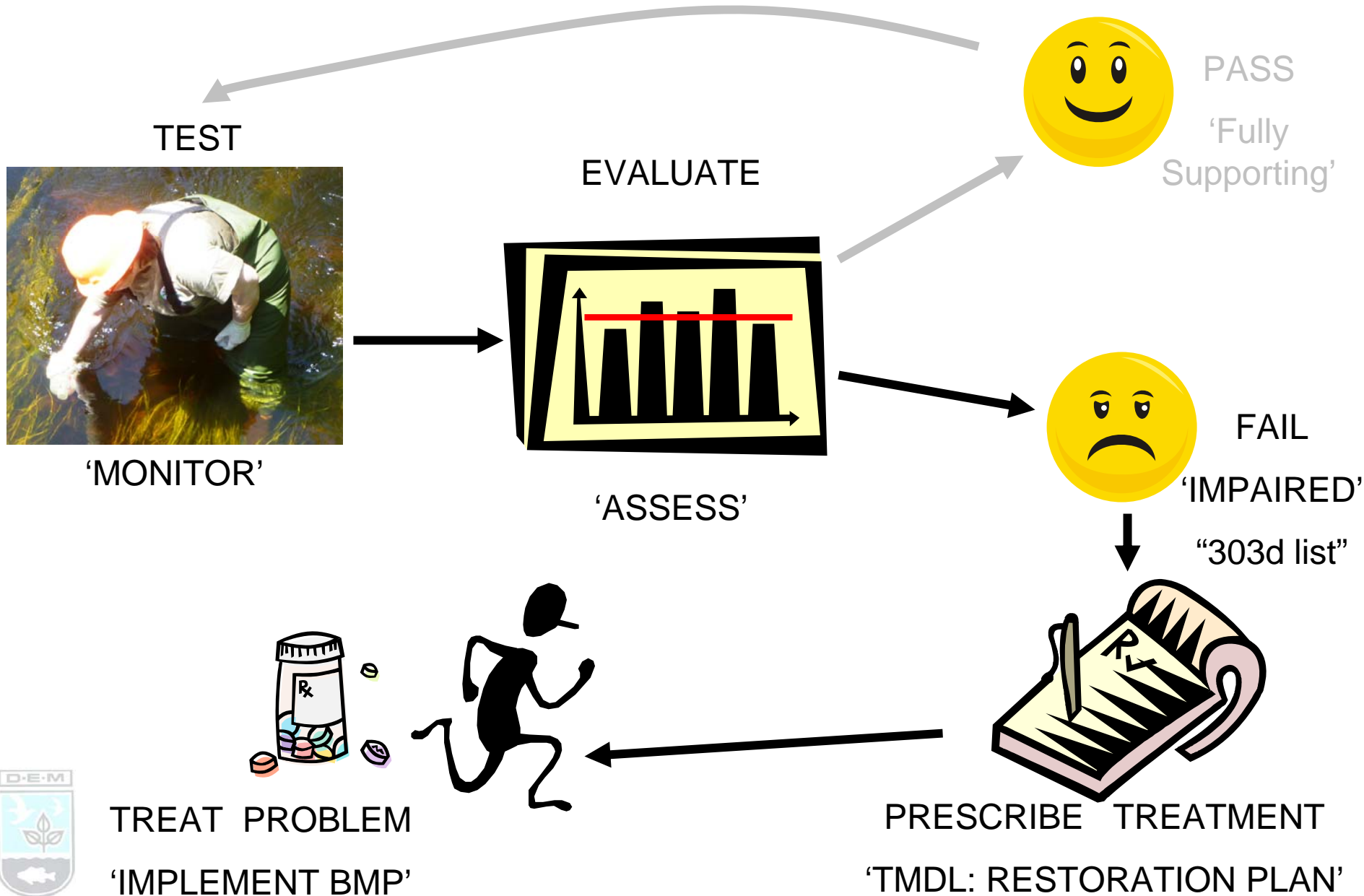
Impaired Water	Impairment / Pollutant	TMDL Status	Contact
Statewide			
Northeast Regional Mercury TMDL	Mercury	Approved 12/20/07	Scott Ribas
Statewide Bacteria TMDL	Bacteria	Approved 9/22/11	Heidi Travas
Blackstone River Basin			
No TMDL Plans approved at this time.			
Coastal Waters			
Aspen Hill Pond	Phosphorus	Approved 9/27/07	Scott Ribas
North Eaton Pond			
Green Hill Pond	Fecal Coliform	Approved 2/16/06	Brian Zalozny
Whisper Pond			
Factory Pond Stream and Tributaries			
Trot Pond Brook			
Indian Run Brook	Dissolved Metals	Approved 6/2/06	Ron Vlasco
Pawcatuck (Narragansett) River	Fecal Coliform	Approved 6/25/01	Elizabeth Scott
Mansfield Brook			
Chocol Brook	Fecal Coliform	Approved 2/19/03	Elizabeth Scott
Point Judith Pond	Fecal Coliform	Approved 6/26/05	Heidi Travas
Bilington Cove			
Chapin Cove			
Pettus Pond Channel			
Lever Augmented River			
Sabinet River (Narragansett Park)	Fecal Coliform	Approved 6/7/05	Chris Haines
The Cove, Island Park			
Sand Pond	Phosphorus Excess Algal Growth Turbidity Taste and Odor	Approved 6/2/08	Ron Vlasco
Narragansett River	Fecal Coliform	Approved 7/8/02	Elizabeth Scott
Mansfield Brook			
Rocky Brook and Tributaries			
Indian Run Brook			
Moshassuck River Basin			
No TMDL Plans approved at this time.			
Narragansett Basin			
Narragansett River	Fecal Coliform	Approved 12/6/02	Heidi Travas

<http://www.dem.ri.gov/programs/benviron/water/quality/rest/reports.htm>

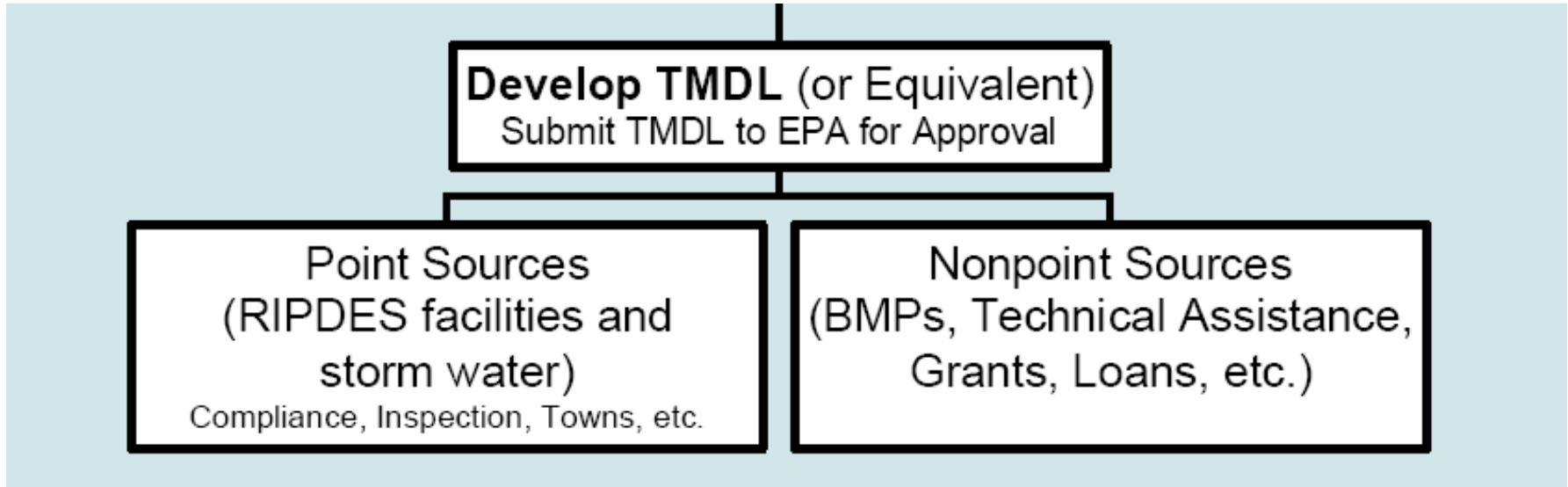
Tributaries to Warwick Pond			
Aspen Hill Pond	Phosphorus	Approved 9/27/07	Scott Ribas
Enclosure Pond			
Green Pond			

Impaired Waters & TMDL Restoration Plans

per requirements of the Federal Clean Water Act



Impaired Waters & TMDL Restoration Plans per requirements of the Federal Clean Water Act



Impaired Waters & TMDL Restoration Plans per requirements of the Federal Clean Water Act

Develop TMDL (or Equivalent)
Submit TMDL to EPA for Approval

Point Sources
(RIPDES facilities and
storm water)

Compliance, Inspection, Towns, etc.

Nonpoint Sources
(BMPs, Technical Assistance,
Grants, Loans, etc.)

Water/Wastewater Permits



Impaired Waters & TMDL Restoration Plans per requirements of the Federal Clean Water Act

Develop TMDL (or Equivalent)
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Point Sources
(RIPDES facilities and
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Compliance, Inspection, Towns, etc.





Nonpoint Sources
(BMPs, Technical Assistance,
Grants, Loans, etc.)

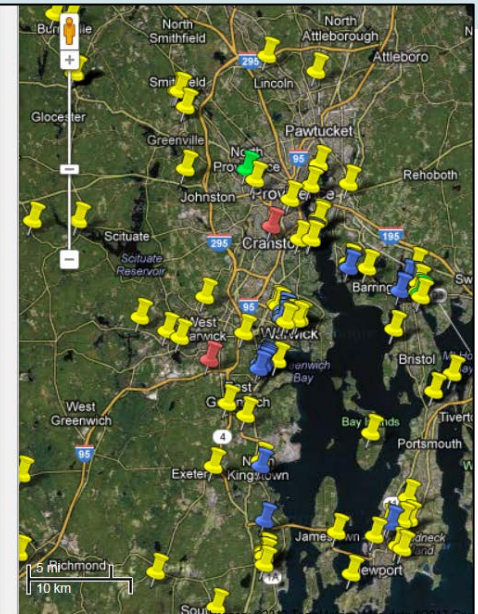
NPS Pollution Program: 319 Projects

-- Pin Legend --
Yellow: construction projects
Blue: feasibility/design projects
Red: planning projects
Green: studies

Grant # = FY-Water(NPS) - #
FY = Fiscal Year

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-  **Woonasquatucket Reservoir Stormwater Abatement Mann School Road - #2**
Grant #: 02-Water(NPS)-22 Grantee: Town of Smithfield Proj Overview: This project will address NPS pollutants to the Woonasquatucket Reservoir, aka Stump Pond, from stormwa along Wonkehl...
-  **Onsite Wastewater Management, Stormwater Management, BMP Implementation and Stillhouse C Restoration - Restoration #2**
Grant #: 00-Water(NPS)-05 Grantee: City of Cranston Restor #2: Implementation of phragmites removal and saltmarsh rest Photo 1: healthy spartina growth <http://www.dem.ni.gov/progr>
-  **Onsite Wastewater Management, Stormwater Management, BMP Implementation and Stillhouse C Restoration - BMP Implementation**
Grant #: 00-Water(NPS)-05 Grantee: City of Cranston BMP Implementation: Installation of a Vortech unit Photo: <http://www.dem.ni.gov/programs/benviron/water/quality/nonpc>
-  **Onsite Wastewater Management, Stormwater Management, BMP Implementation and Stillhouse C**



Today's Outline

1. Monitoring/check-up : Clean Water Act Process
2. RI Water Monitoring Strategy & RIDEM OWR
3. Data availability and “assessment reporting”
4. Integrated Report Assessment Categories
5. Impaired Waters & TMDL Restoration Plans
6. Using categories to support WQ protection



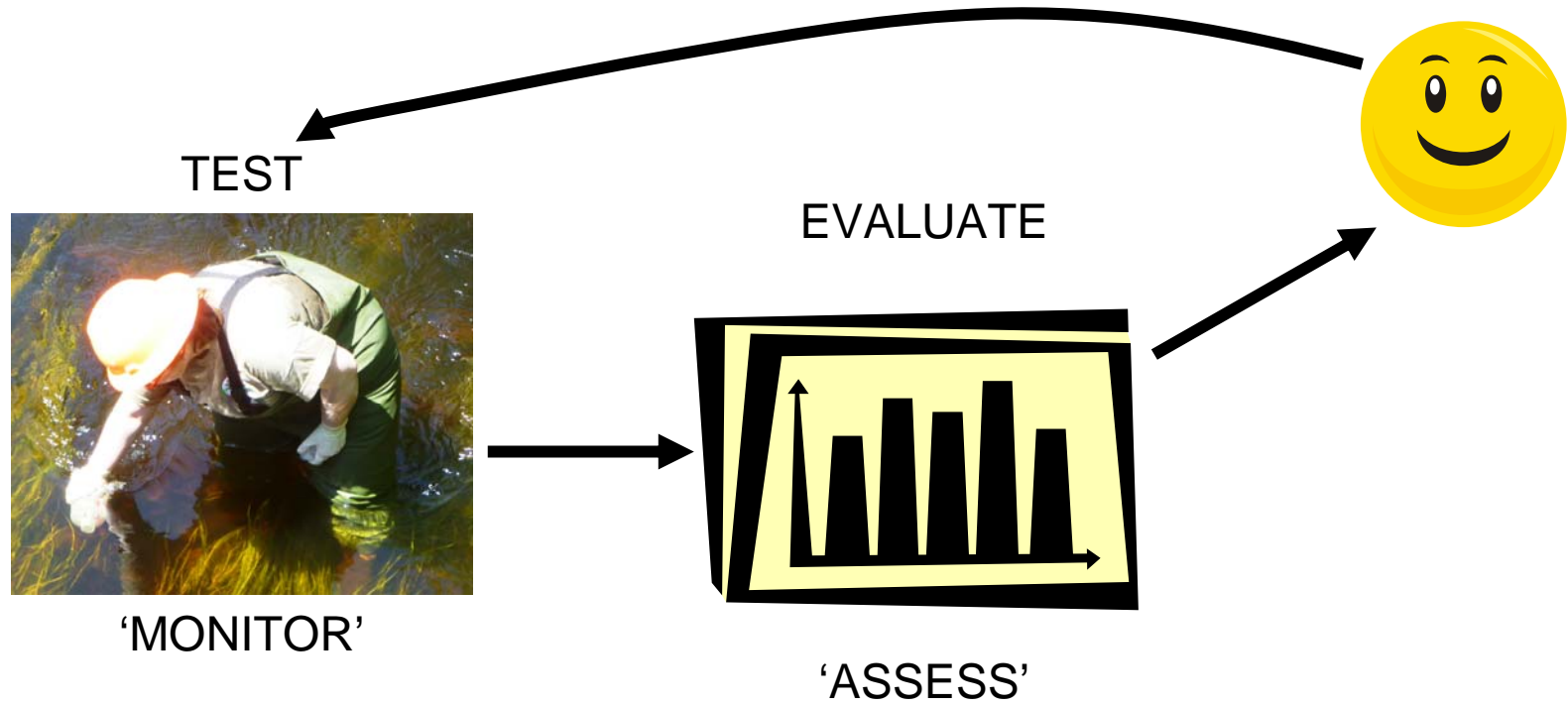
Using categories to support WQ protection

Category 1 - Fully Support All Uses:



Using categories to support WQ protection

Category 1 - Fully Support All Uses:



Your priority is to keep monitoring all uses!



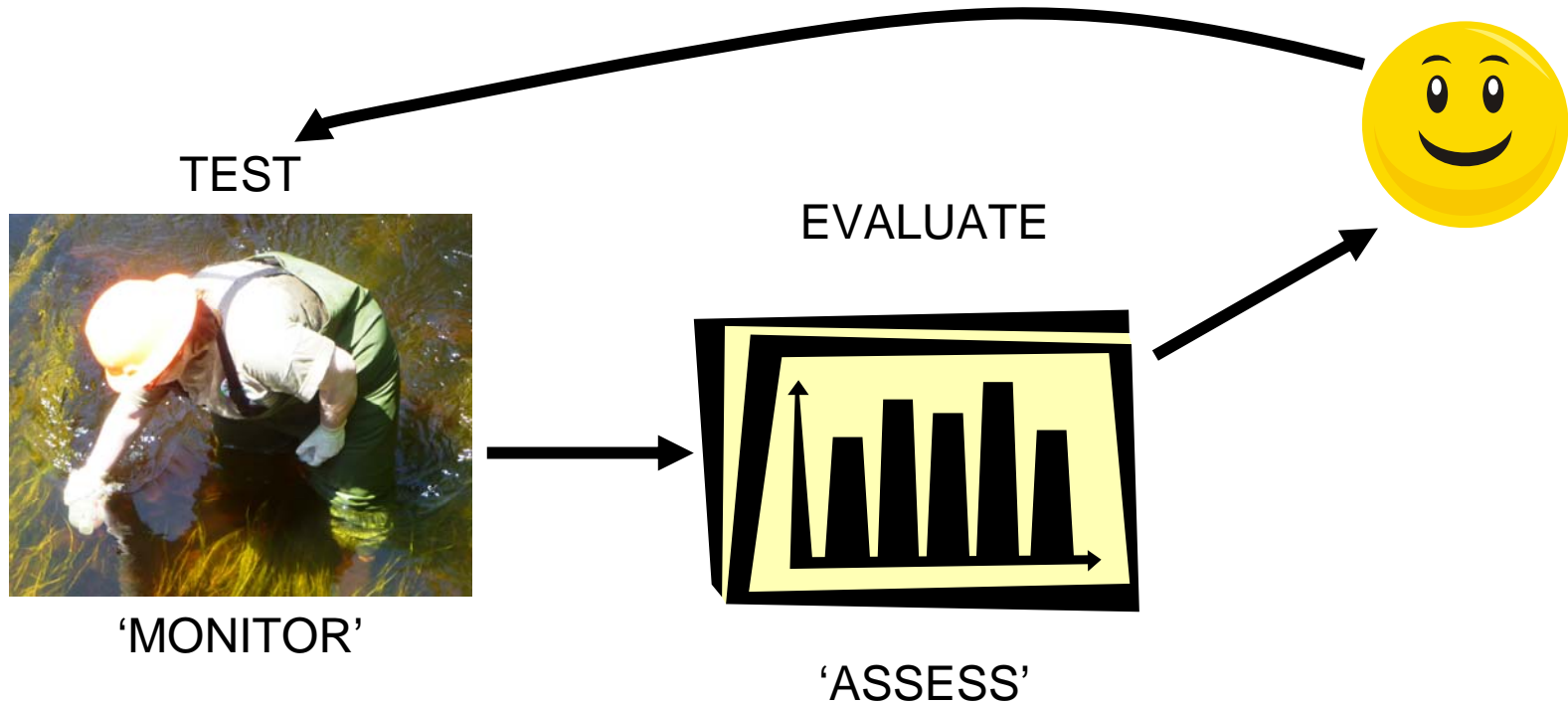
Using categories to support WQ protection

Category 2 - Fully Support Some Uses



Using categories to support WQ protection

Category 2 - Fully Support Some Uses

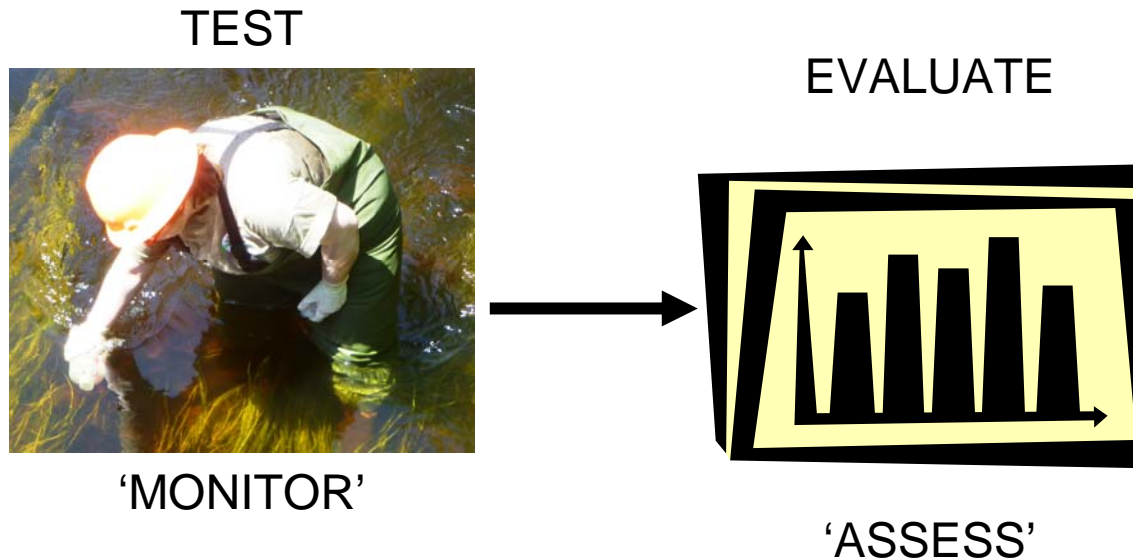


- Your priorities:
- keep monitoring current uses
 - incorporate monitoring of other use



Using categories to support WQ protection

Category 3 - No Monitoring Data



Your priority: get monitoring!



Today's Outline

1. Monitoring/check-up : Clean Water Act Process
2. RI Water Monitoring Strategy & RIDEM OWR
3. Data availability and “assessment reporting”
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5. Impaired Waters & TMDL Restoration Plans
6. Using categories to support WQ protection
7. Using categories to support WQ improvement



Using categories to support WQ restoration

Category 4a - Impaired and TMDL done

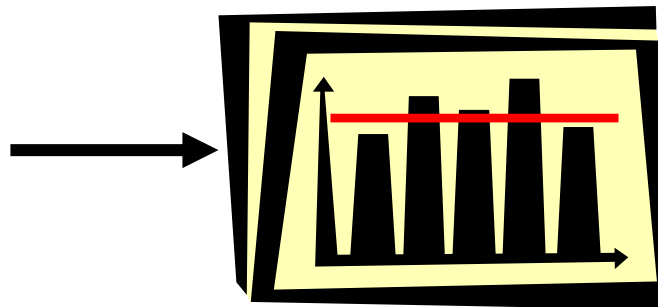


Using categories to support WQ restoration

Category 4a - Impaired and TMDL done



'MONITOR'



'ASSESS'



FAIL

'IMPAIRED'

"303d list"



PRESCRIBE TREATMENT

'TMDL: RESTORATION PLAN'



PRIORITY!!

TREAT PROBLEM

'IMPLEMENT BMP'



Using categories to support WQ restoration

Category 4 b&c - Impaired and other plan

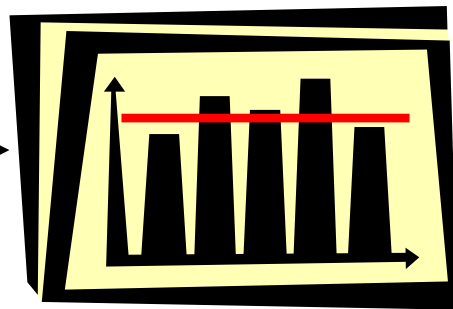


Using categories to support WQ restoration

Category 4 b & c - Impaired and other plan



'MONITOR'



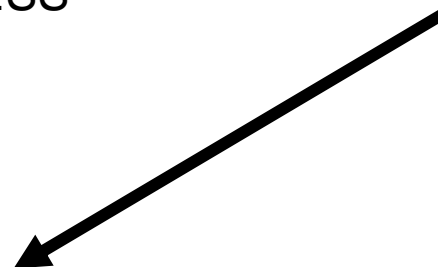
'ASSESS'



FAIL

'IMPAIRED'

"303d list"



TREAT PROBLEM

'IMPLEMENT BMP'

PRIORITY!!



Using categories to support WQ restoration

Category 5 - Impaired and needs TMDL

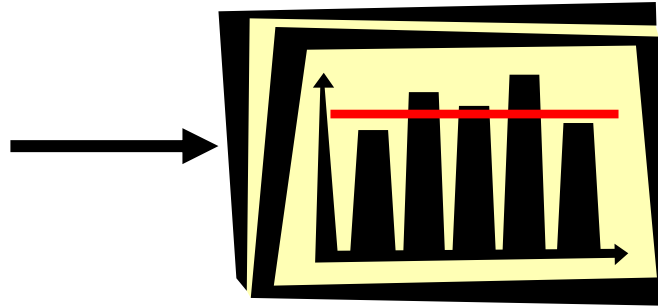


Using categories to support WQ restoration

Category 5 - Impaired and needs TMDL



'MONITOR'



'ASSESS'



FAIL

'IMPAIRED'

"303d list"



TREAT PROBLEM

'IMPLEMENT BMP'



PRIORITY!!



PRESCRIBE TREATMENT

'TMDL: RESTORATION PLAN'



Questions?

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401-222-4700 x 7211

