

Using an Automated Water Quality Report Card System from the East Coast on the West Coast – A Successful Implementation

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Lilian Busse

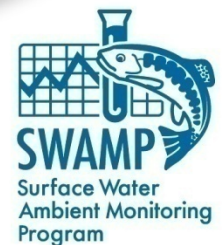
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Overview

- Communication of Monitoring Data in the San Diego Region
- Massachusetts Report Card System and its Automation
- Application of Report Card System in the San Diego Region
- Next Steps



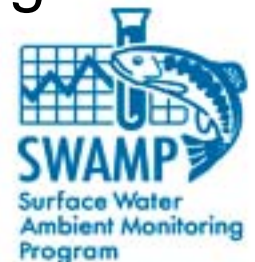
Overview

- Communication of Monitoring Data in the San Diego Region
- Massachusetts Report Card System and its Automation
- Application of Report Card System in the San Diego Region
- Next Steps



From Discharge-Compliance Towards Waterbody-Beneficial Use Monitoring

- *In the past*: Think primarily in terms of discharges
 - Mostly focused on individual constituents in regulated discharges, and in waterbodies close to the discharge
 - Comparing discharge measurements with numeric limits
- *In the future*: Think primarily in terms of conditions and beneficial uses
 - Focus on conditions in space and time in receiving waters (then on stressors and sources)
 - Measure the right response indicators



Why is a Report Card System needed?

We need a report card system to:

- To organize current monitoring data
 - To develop a waterbody-beneficial use monitoring program
 - To disseminate monitoring data to the public, stakeholders, and decision makers
 - To make informed decisions based on monitoring data
- Didn't want to develop our own/new report card system



Overview

- Communication of Monitoring Data in the San Diego Region
- **Massachusetts Report Card System and its Automation**
- Application of Report Card System in the San Diego Region
- Next Steps



MA Report Card System
















- Originally developed to put the MA 305b report into a more usable format
- Developed by Warren Kimball of the MA Department of Environmental Protection, and automated by John Kiddon, Narragansett EPA
- It is currently used :
 - As a pilot project in central MA for stream monitoring
 - As a pilot project for New England's lake and pond monitoring (Lake Attitash)



Goals of MA Report Card

Environmental Baseline	Status
Decision-making Guide	ID problems Prioritize problems Geo-target problems ID threats ID remedial action groups
Public Accounting	Trends
Coordinate Monitoring	Information Inventory ID information gaps



COLOR KEY:  GOOD  CONCERN  FAIR  POOR  N/A	AQUATIC LIFE						RECREATION		FISH EDIBILITY	
										
SEGMENT	BIOLOGY	CHEMISTRY	NUTRIENTS	TOXICS	SEDIMENTS	FLOW	HABITAT	BACTERIA	AESTHETICS	FISH TISSUE
MILLERS RIVER										
to Whitney pond	CONCERN	N/A	N/A	N/A	N/A	CONCERN	N/A	N/A	N/A	POOR
to Winchendon WWTF	N/A	FAIR	N/A	POOR	N/A	CONCERN	N/A	CONCERN	CONCERN	POOR
to Otter River	GOOD	FAIR	FAIR	CONCERN	N/A	CONCERN	N/A	GOOD	GOOD	POOR
to South Royalston	GOOD	GOOD	FAIR	GOOD	POOR	GOOD	GOOD	N/A	GOOD	POOR
to Orange Center	CONCERN	FAIR	FAIR	GOOD	POOR	CONCERN	N/A	N/A	GOOD	POOR
to Erving WWTF	CONCERN	FAIR	N/A	GOOD	CONCERN	CONCERN	N/A	N/A	GOOD	POOR
to Connecticut River	GOOD	FAIR	FAIR	CONCERN	CONCERN	CONCERN	GOOD	N/A	CONCERN	POOR
OTTER RIVER										
to Gardner WWTF	FAIR	POOR	FAIR	N/A	N/A	N/A	GOOD	GOOD	CONCERN	POOR
to Seaman Paper Co.	FAIR	POOR	POOR	CONCERN	POOR	CONCERN	CONCERN	N/A	POOR	POOR
to Millers River	FAIR	FAIR	POOR	GOOD	POOR	CONCERN	GOOD	N/A	POOR	POOR
TULLY RIVER										
East Branch	CONCERN	FAIR	N/A	N/A	N/A	N/A	CONCERN	N/A	CONCERN	POOR
Boyce Brook	GOOD	FAIR	N/A	N/A	N/A	N/A	N/A	N/A	GOOD	POOR
West Branch	GOOD	GOOD	N/A	N/A	N/A	N/A	GOOD	N/A	GOOD	POOR
Lawrence Brook	GOOD	POOR	N/A	N/A	N/A	N/A	GOOD	N/A	GOOD	POOR
Main Stem	CONCERN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	GOOD	POOR



SEGMENT	AQUATIC LIFE							RECREATION		FISH EDIBILITY
	BIOLOGY	CHEMISTRY	NUTRIENTS	TOXICS	SEDIMENTS	FLOW	HABITAT	BACTERIA	AESTHETICS	FISH TISSUE
MILLERS RIVER										
to Whitney pond	CONCERN	N/A	N/A	N/A	N/A	CONCERN	N/A	N/A	N/A	POOR
to Winchendon WWTF	N/A	FAIR	N/A	POOR	N/A	CONCERN	N/A	CONCERN	CONCERN	POOR
to Otter River	GOOD	FAIR	FAIR	CONCERN	N/A	CONCERN	N/A	GOOD	GOOD	POOR
to South Royalston	GOOD	GOOD	FAIR	GOOD	POOR	GOOD	GOOD	GOOD	GOOD	POOR
to Orange Center	CONCERN	3 Core Beneficial Uses								
to Erving WWTF	CONCERN									
to Connecticut River	GOOD	FAIR	FAIR	CONCERN	CONCERN	CONCERN	GOOD	N/A	CONCERN	POOR
OTTER RIVER										
to Gardner WWTF	FAIR	POOR	FAIR	N/A	N/A	N/A	GOOD	GOOD	CONCERN	POOR
to Seaman Paper Co.	FAIR	POOR	POOR	CONCERN	POOR	CONCERN	CONCERN	N/A	POOR	POOR
to Millers River	FAIR	FAIR	POOR	GOOD	POOR	CONCERN	GOOD	N/A	POOR	POOR
TULLY RIVER										
East Branch	CONCERN	FAIR	N/A	N/A	N/A	N/A	CONCERN	N/A	CONCERN	POOR
Boyce Brook	GOOD	FAIR	N/A	N/A	N/A	N/A	N/A	GOOD	GOOD	POOR
West Branch	GOOD	GOOD	N/A	N/A	N/A	N/A	GOOD	N/A	GOOD	POOR
Lawrence Brook	GOOD	POOR	N/A	N/A	N/A	N/A	GOOD	N/A	GOOD	POOR
Main Stem	CONCERN	N/A	N/A	N/A	N/A	N/A	N/A	GOOD	GOOD	POOR

3 Core Beneficial Uses



COLOR KEY: GOOD CONCERN FAIR POOR N/A	AQUATIC LIFE						RECREATION	FISH EDIBILITY		
	BIOLOGY	CHEMISTRY	NUTRIENTS	TOXICS	SEDIMENTS	FLOW	HABITAT	BACTERIA	AESTHETICS	FISH TISSUE
SEGMENT	BIOLOGY	CHEMISTRY	NUTRIENTS	TOXICS	SEDIMENTS	FLOW	HABITAT	BACTERIA	AESTHETICS	FISH TISSUE
MILLERS RIVER										
to Whitney pond	CONCERN	N/A	N/A	N/A	N/A	CONCERN	N/A	N/A	N/A	POOR
to Winchendon WWTF	N/A	FAIR	N/A	POOR	N/A	CONCERN	N/A	CONCERN	N/A	POOR
to Otter River	GOOD	FAIR	FAIR	CONCERN	N/A	CONCERN	N/A	GOOD	GOOD	POOR
to South Royalston	GOOD	FAIR	FAIR	GOOD	POOR	GOOD	GOOD	GOOD	GOOD	POOR
to Orange Center	CONCERN	N/A	N/A	N/A	N/A	N/A	N/A	GOOD	GOOD	POOR
to Erving WWTF	CONCERN	N/A	N/A	N/A	N/A	N/A	N/A	GOOD	GOOD	POOR
to Connecticut River	GOOD	FAIR	FAIR	CONCERN	CONCERN	CONCERN	GOOD	N/A	CONCERN	POOR
OTTER RIVER										
to Gardner WWTF	FAIR	POOR	FAIR	N/A	N/A	N/A	GOOD	GOOD	CONCERN	POOR
to Seaman Paper Co.	FAIR	POOR	POOR	CONCERN	POOR	CONCERN	CONCERN	N/A	POOR	POOR
to Millers River	FAIR	FAIR	POOR	GOOD	POOR	CONCERN	GOOD	N/A	POOR	POOR
TULLY RIVER										
East Branch	CONCERN	FAIR	N/A	N/A	N/A	N/A	CONCERN	N/A	CONCERN	POOR
Boyce Brook	GOOD	FAIR	N/A	N/A	N/A	N/A	N/A	GOOD	GOOD	POOR
West Branch	GOOD	GOOD	N/A	N/A	N/A	N/A	GOOD	GOOD	GOOD	POOR
Lawrence Brook	GOOD	POOR	N/A	N/A	N/A	N/A	GOOD	N/A	GOOD	POOR
Main Stem	CONCERN	N/A	N/A	N/A	N/A	N/A	N/A	GOOD	GOOD	POOR

3 Response Indicators



SEGMENT	AQUATIC LIFE							RECREATION	FISH EDIBILITY	
	BIOLOGY	CHEMISTRY	NUTRIENTS	TOXICS	SEDIMENTS	FLOW	HABITAT	BACTERIA	AESTHETICS	FISH TISSUE
MILLERS RIVER										
to Whitney pond	CONCERN	N/A	N/A	N/A	N/A	CONCERN	N/A	N/A	N/A	POOR
to Winchendon WWTF	N/A	FAIR	N/A	POOR	N/A	CONCERN	N/A	CONCERN	CONCERN	POOR
to Otter River	GOOD	FAIR	FAIR	CONCERN	N/A	CONCERN	N/A	GOOD	GOOD	POOR
to South Royalston	GOOD	FAIR	FAIR	CONCERN	POOR	CONCERN	GOOD	GOOD	GOOD	POOR
to Orange Center	CONCERN	N/A	N/A	N/A	N/A	N/A	N/A	GOOD	GOOD	POOR
to Erving WWTF	CONCERN	N/A	N/A	N/A	N/A	N/A	N/A	GOOD	GOOD	POOR
to Connecticut River	GOOD	FAIR	FAIR	CONCERN	CONCERN	CONCERN	GOOD	N/A	CONCERN	POOR
OTTER RIVER										
to Gardner WWTF	FAIR	POOR	FAIR	N/A	N/A	N/A	GOOD	GOOD	CONCERN	POOR
to Seaman Paper Co.	FAIR	POOR	POOR	CONCERN	POOR	CONCERN	CONCERN	N/A	POOR	POOR
to Millers River	FAIR	FAIR	POOR	GOOD	POOR	CONCERN	GOOD	N/A	POOR	POOR
TULLY RIVER										
East Branch	CONCERN	FAIR	N/A	N/A	N/A	N/A	CONCERN	N/A	CONCERN	POOR
Boyce Brook	GOOD	FAIR	N/A	N/A	N/A	N/A	N/A	GOOD	GOOD	POOR
West Branch	GOOD	GOOD	N/A	N/A	N/A	N/A	GOOD	N/A	GOOD	POOR
Lawrence Brook	GOOD	POOR	N/A	N/A	N/A	N/A	GOOD	N/A	GOOD	POOR
Main Stem	CONCERN	N/A	N/A	N/A	N/A	N/A	N/A	GOOD	GOOD	POOR

7 Additional Indicators



COLOR KEY: GOOD CONCERN FAIR POOR N/A	AQUATIC LIFE						RECREATION		FISH EDIBILITY	
	BIOLOGY	CHEMISTRY	NUTRIENTS	TOXICS	SEDIMENTS	FLOW	HABITAT	BACTERIA	AESTHETICS	FISH TISSUE
SEGMENT										
MILLERS RIVER										
to Whitney pond	CONCERN	N/A	N/A	N/A	N/A	CONCERN	N/A	N/A	N/A	POOR
to Winchendon WWTF	N/A	FAIR	N/A	POOR	N/A	CONCERN	N/A	CONCERN	CONCERN	POOR
to Otter River	GOOD	FAIR	FAIR	CONCERN	N/A	CONCERN	N/A	GOOD	GOOD	POOR
to South Royalston	GOOD	GOOD	FAIR	GOOD	POOR	GOOD	GOOD	N/A	GOOD	POOR
to Orange Center										
to Erving WWTF										
to Connecticut River	GOOD	FAIR	FAIR	CONCERN	CONCERN	CONCERN	GOOD	N/A	CONCERN	POOR
OTTER RIVER										
to Gardner WWTF	FAIR	POOR	FAIR	N/A	N/A	N/A	GOOD	GOOD	CONCERN	POOR
to Seaman Paper Co.	FAIR	POOR	POOR	CONCERN	POOR	CONCERN	CONCERN	N/A	POOR	POOR
to Millers River	FAIR	FAIR	POOR	GOOD	POOR	CONCERN	GOOD	N/A	POOR	POOR
TULLY RIVER										
East Branch	CONCERN	FAIR	N/A	N/A	N/A	N/A	CONCERN	N/A	CONCERN	POOR
Boyce Brook	GOOD	FAIR	N/A	N/A	N/A	N/A	N/A	N/A	GOOD	POOR
West Branch	GOOD	GOOD	N/A	N/A	N/A	N/A	GOOD	N/A	GOOD	POOR
Lawrence Brook	GOOD	POOR	N/A	N/A	N/A	N/A	GOOD	N/A	GOOD	POOR
Main Stem	CONCERN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	GOOD	POOR

Stream Segments and Locations










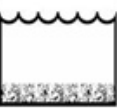







SEGMENT	AQUATIC LIFE						RECREATION		FISH EDIBILITY	
	BIOLOGY	CHEMISTRY	NUTRIENTS	TOXICS	SEDIMENTS	FLOW	HABITAT	BACTERIA	AESTHETICS	FISH TISSUE
MILLERS RIVER										
to Whitney pond	CONCERN	N/A	N/A	N/A	N/A	CONCERN	N/A	N/A	N/A	POOR
to Winchendon WWTF	N/A	FAIR	N/A	POOR	N/A	CONCERN	N/A	CONCERN	CONCERN	POOR
to Otter River	GOOD	FAIR	FAIR	CONCERN	N/A	CONCERN	N/A	GOOD	GOOD	POOR
to South Royalston	GOOD	GOOD	FAIR	GOOD	POOR	GOOD	GOOD	N/A	GOOD	POOR
to Orange Center	CONCERN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
to Erving WWTF	CONCERN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
to Connecticut River	GOOD	FAIR	FAIR	CONCERN	CONCERN	CONCERN	GOOD	N/A	CONCERN	POOR
OTTER RIVER										
to Gardner WWTF	FAIR	POOR	FAIR	N/A	N/A	N/A	GOOD	GOOD	CONCERN	POOR
to Seaman Paper Co.	FAIR	POOR	POOR	CONCERN	POOR	CONCERN	CONCERN	N/A	POOR	POOR
to Millers River	FAIR	FAIR	POOR	GOOD	POOR	CONCERN	GOOD	N/A	POOR	POOR
TULLY RIVER										
East Branch	CONCERN	FAIR	N/A	N/A	N/A	N/A	CONCERN	N/A	CONCERN	POOR
Boyce Brook	GOOD	FAIR	N/A	N/A	N/A	N/A	N/A	GOOD	GOOD	POOR
West Branch	GOOD	GOOD	N/A	N/A	N/A	N/A	GOOD	N/A	GOOD	POOR
Lawrence Brook	GOOD	POOR	N/A	N/A	N/A	N/A	GOOD	N/A	GOOD	POOR
Main Stem	CONCERN	N/A	N/A	N/A	N/A	N/A	N/A	GOOD	GOOD	POOR

Color Coding



SEGMENT	AQUATIC LIFE						RECREATION		FISH EDIBILITY		
	BIOLOGY	CHEMISTRY	NUTRIENTS	TOXICS	SEDIMENTS	FLOW	HABITAT	BACTERIA	AESTHETICS	FISH TISSUE	
MILLERS RIVER											
to Whitney pond	F					Q				Hg	
to Winchendon WWTF		pH		U		Q		B	C	Hg,PCB	
to Otter River		pH	P	U		Q				Hg, PCB	
to South Royalston			P		PCB					Hg,PCB	
to Orange Center	A,F	pH	P		PCB	Q				Hg, PCB	
to Erving WWTF	A,F	pH	P		PCB	Q				Hg, PCB	
to Connecticut River		pH	P	U	PCB	Q			C	Hg, PCB	
OTTER RIVER											
to Gardner WWTF	I,F	DO,pH,T	P						C	Hg, PCB	
to Seaman Paper Co.	I,F	DO,pH, T	P	U	Me	Q	S		C,D	Hg, PCB	
to Millers River	I,F	pH	P		PCB	Q			O,C,D	Hg, PCB	
TULLY RIVER											
East Branch	F	pH					S		G	Hg, PCB	
Boyce Brook		pH								Hg, PCB	
West Branch										Hg, PCB	
Lawrence Brook		pH								Hg,PCB	
Main Stem	F									Hg, PCB	
			Stressors								

COLOR KEY:  GOOD  CONCERN  FAIR  POOR  N/A	AQUATIC LIFE						RECREATION		FISH EDIBILITY	
	 BIOLOGY	 CHEMISTRY	 NUTRIENTS	 TOXICS	 SEDIMENTS	 FLOW	 HABITAT	 BACTERIA	 AESTHETICS	 FISH TISSUE
SEGMENT	BIOLOGY	CHEMISTRY	NUTRIENTS	TOXICS	SEDIMENTS	FLOW	HABITAT	BACTERIA	AESTHETICS	FISH TISSUE
MILLERS RIVER										
to Whitney pond	3					1				2
to Winchendon WWTF		4		4		4		1	1	2
to Otter River	3	3	3	1		4		1	2	2
to South Royalston	3	3	3	2	4	4	3		2	2
to Orange Center	4	2	2	4	2	2			2	2
to Erving WWTF	4	2	2	4	1	2			2	2
to Connecticut River	3	3	3	4	1	4	3		2	2
OTTER RIVER										
to Gardner WWTF	4	2	2				3	1	2	1
to Seaman Paper Co.	4	3	3	1	2	4	3		2	2
to Millers River	4	2	2	4	4	2	3		2	2
TULLY RIVER										
East Branch	4	1					3		2	1
Boyce Brook	3	1							2	1
West Branch	4	1					3		2	1
Lawrence Brook	4	1					3		2	1
Main Stem	3								2	1

Metadata

SEGMENT	POINT SOURCES		NON-POINT SOURCES						
	MUNICIPAL	INDUSTRIAL	STORM WATER	RESOURCE EXTRACT.	LAND DISPOSAL	SEDIMENT	HYDRO MODIFICA.	OTHER	UNKNOWN
MILLERS RIVER									
to Whitney Pond							WDL,IMP	ATM	
to Winchendon WWTF	CSO					SED*		ATM	
to Otter River	MTF				LDF	SED*		ATM	
to South Royalston						SED		ATM	
to Orange Center						SED	IMP,FLW	ATM	
to Erving WWTF						SED	IMP,FLW	ATM	
to Connecticut River					LDF	SED	FLW	ATM	
OTTER RIVER									
to Gardner WWTF			URB			SED*		ATM	
to Seaman Paper Co.	MTF,MS4		HWY	S&G		SED*		ATM	
to Millers River	MTF		HWY	S&G		SED		ATM	
TULLY RIVER									
East Branch					LDF	SED*	FLW	ATM	
Boyce Brook						SED*		ATM	
West Branch						SED*		ATM	
Lawrence Brook						SED*		ATM	
Main Stem								ATM	

Sources

Segment Data Sheet

River Basin: San Diego River Watershed			Data Year: 2007-2010			
Segment Name: San Vicente, Boulder Creek, El Capitan						
Class:			Size:		Seg ID #:	
CATEGORY	INDICATOR ASSESSMENT	OVERALL STATUS	DATA LEVEL	POINT <small>Click below to select Sources</small>	NONPOINT	
Biology	Plank/Peri. A	NA	NA	NA		
	Macrophyton M	NA				
	Invertebrates I	NA				
	Fish F	NA				
	Wildlife W	NA				
Chemistry	Dis. Oxygen DO	NA	NA	NA		
	pH pH	NA				
	Temperature T	NA				
	Ionic Strength Z	NA				
	Sus. Solids SS	NA				
Nutrients	Phosphorus P	NA	NA	NA		
	Nitrogen N	NA				
Toxicity	Unknown U	NA	NA	NA		
	Spec. Chem. Hg	NA				
Flow	Flow Q	NA	NA	NA		
Habitat	Substrate S	NA	NA	NA		
	Morphology H	NA				
	Riparian Zone R	NA				
Bacteria	Bacteria B	NA	NA	NA		
Aesthetics	Oil & Grease G	NA	NA	NA		
	Taste & Odor O	NA				
	Turb/Color C	NA				
	Nuisance Plants V	NA				
	Trash /Debris D	NA				
Tissue	Spec. Chem. DDT	NA	NA	NA		
Sediment	Unknown U	NA	NA	NA		
	Spec. Chem. PCB	NA				
Comments:	* Suspected Source ** Potential Source No asterisk: Known Source [Out of Segment Source]					



Segment Data Sheet

Assess each indicator, criteria have to be developed → decision is made here!

River Basin: San Diego River Watershed			Data Year: 2007-2010			
Segment Name: San Vicente, Boulder Creek, El Capitan						
Class:			Size:		Seg ID #:	
CATEGORY	INDICATOR ASSESSMENT	OVERALL STATUS	DATA LEVEL	POINT	NONPOINT	
				Click below to select Sources		
Biology	Plank/Peri. A	NA	NA	NA		
	Macrophyton M	NA				
	Invertebrates I	Poor				
	Fish F	NA				
	Wildlife W	NA				
Chemistry	Dis. Oxygen DO	Good	NA	NA		
	pH pH	Excellent				
	Temperature T	NA				
	Ionic Strength Z	Poor				
	Sus. Solids SS	NA				
Nutrients	Phosphorus P	NA	NA	NA		
	Nitrogen N	NA				
Toxicity	Unknown U	NA	NA	NA		
	Spec. Chem. Hg	NA				
Flow	Flow Q	NA	NA	NA		
Habitat	Substrate S	NA	NA	NA		
	Morphology H	NA				
	Riparian Zone R	NA				
Bacteria	Bacteria B	NA	NA	NA		
Aesthetics	Oil & Grease G	NA	NA	NA		
	Taste & Odor O	NA				
	Turb/Color C	NA				
	Nuisance Plants V	NA				
	Trash /Debris D	NA				
Tissue	Spec. Chem. DDT	NA	NA	NA		
Sediment	Unknown U	NA	NA	NA		
	Spec. Chem. PCB	NA				
Comments:	* Suspected Source ** Potential Source No asterisk: Known Source [Out of Segment Source]					





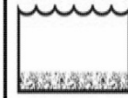







River Basin: San Diego River Watershed			Data Year: 2007-2010			
Segment Name: San Vicente, Boulder Creek, El Capitan						
Class:			Seg ID #:			
CATEGORY	INDICATOR ASSESSMENT	OVERALL STATUS	DATA LEVEL	POINT	NONPOINT	
				Click below to select Sources		
Biology	Plank/Peri. A	NA	Poor	NA		
	Macrophyton M	NA				
	Invertebrates I	Poor				
	Fish F	NA				
	Wildlife W	NA				
Chemistry	Dis. Oxygen DO	Good	Poor	NA		
	pH pH	Excellent				
	Temperature T	NA				
	Ionic Strength Z	Poor				
	Sus. Solids SS	NA				
Nutrients	Phosphorus P	NA	NA	NA		
	Nitrogen N	NA				
Toxicity	Unknown U	NA	NA	NA		
	Spec. Chem. Hg	NA				
Flow	Flow Q	NA	NA	NA		
Habitat	Substrate S	NA	NA	NA		
	Morphology H	NA				
	Riparian Zone R	NA				
Bacteria	Bacteria B	NA	NA	NA		
Aesthetics	Oil & Grease G	NA	NA	NA		
	Taste & Odor O	NA				
	Turb/Color C	NA				
	Nuisance Plants V	NA				
	Trash /Debris D	NA				
Tissue	Spec. Chem. DDT	NA	NA	NA		
Sediment	Unknown U	NA	NA	NA		
	Spec. Chem. PCB	NA				
Comments:	* Suspected Source ** Potential Source No asterisk: Known Source [Out of Segment Source]					

**Overall Status:
Lowest indicator
rank chosen**



Report Card

San Diego River Watershed		Water Quality Report Card						2007-2010 Assessment		
	AQUATIC LIFE						RECREATION	FISH EDIBILITY		
										
SEGMENT	BIOLOGY	CHEMISTRY	NUTRIENTS	TOXICS	SEDIMENTS	FLOW	HABITAT	BACTERIA	AESTHETICS	FISH TISSUE
San Diego River										
907.2 - 907.4	Poor	Poor	NA	NA	NA	NA	NA	NA	NA	NA
bbb	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ccc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ddd	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
eee	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
fff	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ggg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
hhh	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
iii	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
jjj	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
kkk	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
lll	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
mmm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
nnn	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ooo	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ppp	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
qqq	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
rrr	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sss	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ttt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
uuu	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
vvv	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
www	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
xxx	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Report Card automatically created through segment data sheets

Overview

- Communication of Monitoring Data in the San Diego Region
- Massachusetts Report Card System and its Automation
- **Application of Report Card System in the San Diego Region**
- Next Steps



San Diego River Watershed, 2005-2006

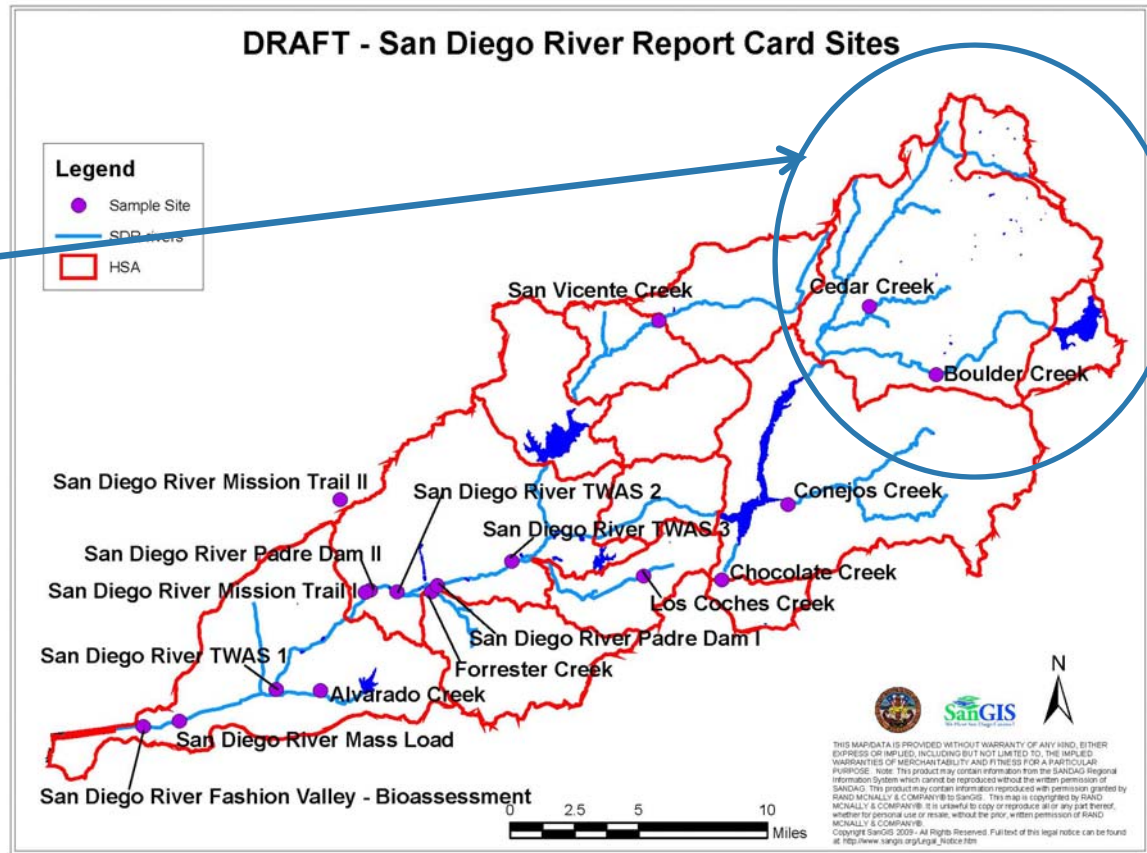
San Diego River Watershed		Water Quality Report Card						2005-2006 Assessment		
	AQUATIC LIFE							RECREATION	FISH EDIBILITY	
SEGMENT	BIOLOGY	CHEMISTRY	NUTRIENTS	TOXICS	SEDIMENTS	FLOW	HABITAT	BACTERIA	AESTHETICS	FISH TISSUE
San Diego River										
Cedar Creek	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boulder Creek	Fair	Good	Fair	NA	NA	NA	NA	NA	Excellent	NA
San Vicente HA										
San Vicente Creek	Poor	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
El Capitan HA										
Conejos Creek	Fair	Fair	NA	NA	NA	NA	NA	NA	NA	NA
Chocolate Creek	NA	Poor	Poor	NA	NA	NA	NA	NA	NA	NA
Lower San Diego HA										
Los Coches Creek	NA	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
San Diego River TWAS 3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Forrester Creek	NA	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
San Diego River TWAS 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
San Diego River Padre Dam I	NA	Poor	Poor	NA	NA	NA	NA	NA	NA	NA
San Diego River Padre Dam II	NA	Poor	Poor	NA	NA	NA	NA	NA	NA	NA
San Diego River Mission Trail I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
San Diego River Mission Trail II	Poor	NA	NA	NA	NA	NA	NA	NA	NA	NA
San Diego River TWAS 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alvarado Creek	Poor	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
San Diego River Fashion V.	Poor	NA	Poor	NA	NA	NA	NA	Poor	NA	NA
San Diego River Mass Load	Poor	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
rrr	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sss	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ttt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
uuu	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
vvv	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
www	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
xxx	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA



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San Diego River Watershed, 2005-2006

San Diego River Watershed	
	EXCELLENT
	GOOD
	CONCERN
	FAIR
	POOR
	NA
SEGMENT	BIOLC
San Diego River	
Cedar Creek	NA
Boulder Creek	Fail
San Vicente HA	
San Vicente Creek	Poo
El Capitan HA	
Conejos Creek	Fail
Chocolate Creek	NA
Lower San Diego HA	
Los Coches Creek	NA
San Diego River TWAS 3	NA
Forrester Creek	NA
San Diego River TWAS 2	NA
San Diego River Padre Dam I	NA
San Diego River Padre Dam II	NA
San Diego River Mission Trail I	NA
San Diego River Mission Trail II	Poo
San Diego River TWAS 1	NA
Alvarado Creek	Poo
San Diego River Fashion V.	Poo
San Diego River Mass Load	Poo
rrr	NA
sss	NA
ttt	NA
uuu	NA
vvv	NA
www	NA
xxx	NA



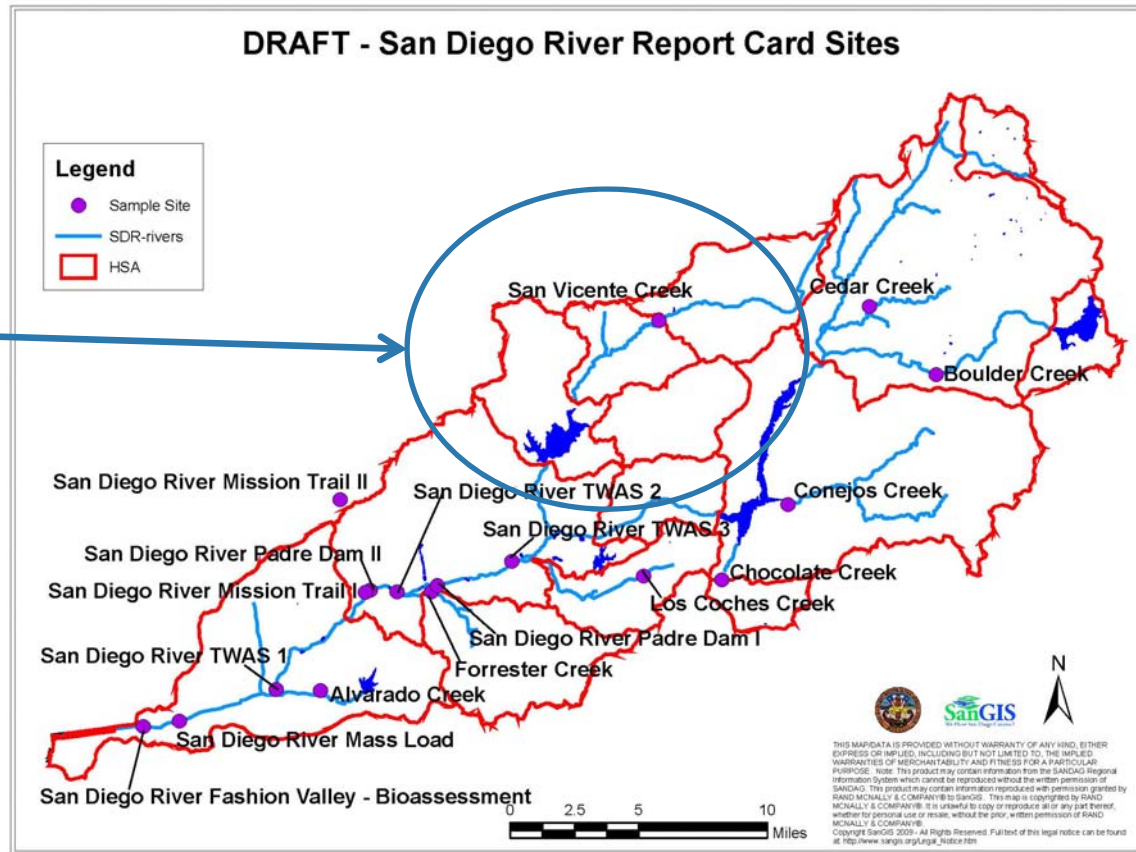
...
uuu	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
vvv	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
www	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
xxx	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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San Diego River Watershed, 2005-2006

San Diego River Watershed	
	EXCELLENT
	GOOD
	CONCERN
	FAIR
	POOR
	NA
SEGMENT	BIOLC
San Diego River	
Cedar Creek	NA
Boulder Creek	Fail
San Vicente HA	
San Vicente Creek	Poo
El Capitan HA	
Conejos Creek	Fail
Chocolate Creek	NA
Lower San Diego HA	
Los Coches Creek	NA
San Diego River TWAS 3	NA
Forrester Creek	NA
San Diego River TWAS 2	NA
San Diego River Padre Dam I	NA
San Diego River Padre Dam II	NA
San Diego River Mission Trail I	NA
San Diego River Mission Trail II	Poo
San Diego River TWAS 1	NA
Alvarado Creek	Poo
San Diego River Fashion V.	Poo
San Diego River Mass Load	Poo
rrr	NA
sss	NA
ttt	NA
uuu	NA
vvv	NA
www	NA
xxx	NA



San Diego River Mission Trail II	San Diego River TWAS 2	San Diego River TWAS 3	San Diego River Padre Dam II	San Diego River Padre Dam I	San Diego River TWAS 1	Forrester Creek	San Diego River Padre Dam I	Los Coches Creek	Chocolate Creek	Conejos Creek	San Vicente Creek	Cedar Creek	Boulder Creek
San Diego River TWAS 1	Alvarado Creek	San Diego River Mass Load	San Diego River Fashion Valley - Bioassessment										

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San Diego River Watershed, 2005-2006

San Diego River Watershed	
	EXCELLENT
	GOOD
	CONCERN
	FAIR
	POOR
	NA
SEGMENT	BIOLC
San Diego River	
Cedar Creek	NA
Boulder Creek	Fai
San Vicente HA	
San Vicente Creek	Poo
El Capitan HA	
Conejos Creek	Fai
Chocolate Creek	NA
Lower San Diego HA	
Los Coches Creek	NA
San Diego River TWAS 3	NA
Forrester Creek	NA
San Diego River TWAS 2	NA
San Diego River Padre Dam I	NA
San Diego River Padre Dam II	NA
San Diego River Mission Trail I	NA
San Diego River Mission Trail II	Poo
San Diego River TWAS 1	NA
Alvarado Creek	Poo
San Diego River Fashion V.	Poo
San Diego River Mass Load	Poo
rrr	NA
sss	NA
ttt	NA
uuu	NA
vvv	NA
www	NA
xxx	NA



...
uuu	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
vvv	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
www	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
xxx	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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San Diego River Watershed, 2005-2006

San Diego River Watershed	
	EXCELLENT
	GOOD
	CONCERN
	FAIR
	POOR
	NA
SEGMENT	BIOLC
San Diego River	
Cedar Creek	NA
Boulder Creek	Fai
San Vicente HA	
San Vicente Creek	Poo
El Capitan HA	
Conejos Creek	Fai
Chocolate Creek	NA
Lower San Diego HA	
Los Coches Creek	NA
San Diego River TWAS 3	NA
Forrester Creek	NA
San Diego River TWAS 2	NA
San Diego River Padre Dam I	NA
San Diego River Padre Dam II	NA
San Diego River Mission Trail I	NA
San Diego River Mission Trail II	Poo
San Diego River TWAS 1	NA
Alvarado Creek	Poo
San Diego River Fashion V.	Poo
San Diego River Mass Load	Poo
rrr	NA
sss	NA
ttt	NA
uuu	NA
vvv	NA
www	NA
xxx	NA



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San Diego River Watershed, 2005-2006

San Diego River Watershed		Water Quality Report Card						2005-2006 Assessment		
	AQUATIC LIFE						RECREATION	FISH EDIBILITY		
SEGMENT	BIOLOGY	CHEMISTRY	NUTRIENTS	TOXICS	SEDIMENTS	FLOW	HABITAT	BACTERIA	AESTHETICS	FISH TISSUE
San Diego River										
Cedar Creek	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boulder Creek	Fair	Good	Fair	NA	NA	NA	NA	NA	NA	NA
San Vicente HA										
San Vicente Creek	Poor	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
El Capitan HA										
Conejos Creek	Fair	Fair	NA	NA	NA	NA	NA	NA	NA	NA
Chocolate Creek	NA	Poor	Poor	NA	NA	NA	NA	NA	NA	NA
Lower San Diego HA										
Los Coches Creek	NA	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
San Diego River TWAS 3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Forrester Creek	NA	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
San Diego River TWAS 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
San Diego River Padre Dam I	NA	Poor	Poor	NA	NA	NA	NA	NA	NA	NA
San Diego River Padre Dam II	NA	Poor	Poor	NA	NA	NA	NA	NA	NA	NA
San Diego River Mission Trail I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
San Diego River Mission Trail II	Poor	NA	NA	NA	NA	NA	NA	NA	NA	NA
San Diego River TWAS 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alvarado Creek	Poor	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
San Diego River Fashion V.	Poor	NA	Poor	NA	NA	NA	NA	Poor	NA	NA
San Diego River Mass Load	Poor	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
rrr	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sss	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ttt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
uuu	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
vvv	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
www	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
xxx	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Reference sites: Fair-Good



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San Diego River Watershed, 2005-2006

San Diego River Watershed		Water Quality Report Card						2005-2006 Assessment		
	AQUATIC LIFE							RECREATION	FISH EDIBILITY	
SEGMENT	BIOLOGY	CHEMISTRY	NUTRIENTS	TOXICS	SEDIMENTS	FLOW	HABITAT	BACTERIA	AESTHETICS	FISH TISSUE
San Diego River										
Cedar Creek	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boulder Creek	Fair	Good	Fair	NA	NA	NA	NA	NA	Excellent	NA
San Vicente HA										
San Vicente Creek	Poor	Poor	Poor	NA	NA	NA	NA	NA	NA	NA
El Capitan HA										
Conejos Creek	Fair	Fair	NA	NA	NA	NA	NA	NA	NA	NA
Chocolate Creek	NA	Poor	Poor	NA	NA	NA	NA	NA	NA	NA
Lower San Diego HA										
Los Coches Creek	NA	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
San Diego River TWAS 3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Forrester Creek	NA	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
San Diego River TWAS 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
San Diego River Padre Dam I	NA	Poor	Poor	NA	NA	NA	NA	NA	NA	NA
San Diego River Padre Dam II	NA	Poor	Poor	NA	NA	NA	NA	NA	NA	NA
San Diego River Mission Trail I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
San Diego River Mission Trail II	Poor	NA	NA	NA	NA	NA	NA	NA	NA	NA
San Diego River TWAS 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alvarado Creek	Poor	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
San Diego River Fashion V.	Poor	NA	Poor	NA	NA	NA	NA	Poor	NA	NA
San Diego River Mass Load	Poor	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
rrr	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sss	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ttt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
uuu	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
vvv	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
www	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
xxx	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Impact of Wildfires?



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San Diego River Watershed, 2005-2006

San Diego River Watershed		Water Quality Report Card						2005-2006 Assessment		
	AQUATIC LIFE							RECREATION	FISH EDIBILITY	
SEGMENT	BIOLOGY	CHEMISTRY	NUTRIENTS	TOXICS	SEDIMENTS	FLOW	HABITAT	BACTERIA	AESTHETICS	FISH TISSUE
San Diego River										
Cedar Creek	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boulder Creek	Fair	Good	Fair	NA	NA	NA	NA	NA	Excellent	NA
San Vicente HA										
San Vicente Creek	Poor	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
El Capitan HA										
Conejos Creek	Fair	Fair	NA	NA	NA	NA	NA	NA	NA	NA
Chocolate Creek	NA	Poor	Poor	NA	NA	NA	NA	NA	NA	NA
Lower San Diego HA										
Los Coches Creek	NA	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
San Diego River TWAS 3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Forrester Creek	NA	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
San Diego River TWAS 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
San Diego River Padre Dam I	NA	Poor	Poor	NA	NA	NA	NA	NA	NA	NA
San Diego River Padre Dam II	NA	Poor	Poor	NA	NA	NA	NA	NA	NA	NA
San Diego River Mission Trail I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
San Diego River Mission Trail II	Poor	NA	NA	NA	NA	NA	NA	NA	NA	NA
San Diego River TWAS 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alvarado Creek	Poor	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
San Diego River Fashion V.	Poor	NA	Poor	NA	NA	NA	NA	Poor	NA	NA
San Diego River Mass Load	Poor	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
rrr	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sss	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ttt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
uuu	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
vvv	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
www	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
xxx	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Poor Conditions in lower San Diego watershed



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San Diego River Watershed, 2005-2006

San Diego River Watershed		Water Quality Report Card						2005-2006 Assessment		
	AQUATIC LIFE							RECREATION	FISH EDIBILITY	
SEGMENT	BIOLOGY	CHEMISTRY	NUTRIENTS	TOXICS	SEDIMENTS	FLOW	HABITAT	BACTERIA	AESTHETICS	FISH TISSUE
San Diego River										
Cedar Creek	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boulder Creek	Fair	Good	Fair	NA	NA	NA	NA	NA	Excellent	NA
San Vicente HA										
San Vicente Creek	Poor	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
EI Capitan HA										
Conejos Creek	Fair	Fair	NA	NA	NA	NA	NA	NA	NA	NA
Chocolate Creek	NA	Poor	Poor	NA	NA	NA	NA	NA	NA	NA
Lower San Diego HA										
Los Coches Creek	NA	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
San Diego River TWAS 3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Forrester Creek	NA	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
San Diego River TWAS 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
San Diego River Padre Dam I	NA	Poor	Poor	NA	NA	NA	NA	NA	NA	NA
San Diego River Padre Dam II	NA	Poor	Poor	NA	NA	NA	NA	NA	NA	NA
San Diego River Mission Trail I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
San Diego River Mission Trail II	Poor	NA	NA	NA	NA	NA	NA	NA	NA	NA
San Diego River TWAS 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alvarado Creek	Poor	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
San Diego River Fashion V.	Poor	NA	Poor	NA	NA	NA	NA	Poor	NA	NA
San Diego River Mass Load	Poor	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
rrr	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sss	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ttt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
uuu	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
vvv	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
www	NA	NA	NA	No data						
xxx	NA	NA	NA							



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San Diego River Watershed, 2005-2006

San Diego River Watershed		Water Quality Report Card						2005-2006 Assessment		
	AQUATIC LIFE						RECREATION	FISH EDIBILITY		
SEGMENT	BIOLOGY	CHEMISTRY	NUTRIENTS	TOXICS	SEDIMENTS	FLOW	HABITAT	BACTERIA	AESTHETICS	FISH TISSUE
San Diego River										
Cedar Creek	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boulder Creek	Fair	Good	Fair	NA	NA	NA	NA	NA	Excellent	NA
San Vicente HA										
San Vicente Creek	Poor	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
El Capitan HA										
Conejos Creek	Fair	Fair	NA	NA	NA	NA	NA	NA	NA	NA
Chocolate Creek	NA	Poor	Poor	NA	NA	NA	NA	NA	NA	NA
Lower San Diego HA										
Los Coches Creek	NA	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
San Diego River TWAS 3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Forrester Creek	NA	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
San Diego River TWAS 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
San Diego River Padre Dam I	NA	Poor	Poor	NA	NA	NA	NA	NA	NA	NA
San Diego River Padre Dam II	NA	Poor	Poor	NA	NA	NA	NA	NA	NA	NA
San Diego River Mission Trail I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
San Diego River Mission Trail II	Poor	NA	NA	NA	NA	NA	NA	NA	NA	NA
San Diego River TWAS 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alvarado Creek	Poor	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
San Diego River Fashion V.	Poor	NA	Poor	NA	NA	NA	NA	Poor	NA	NA
San Diego River Mass Load	Poor	Poor	Poor	NA	NA	NA	NA	NA	Excellent	NA
rrr	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sss	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ttt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
uuu	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
vvv	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
www	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
xxx	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Data but no criteria



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10/3/2011

Summary of San Diego River Watershed Report Card

<p>Environmental Baseline</p>	<p>Status</p>	<p><u>Aquatic Life</u>: Good condition in upper watershed, poor condition in lower watershed</p> <p><u>Recreation</u>: ? Monitoring Gap!</p> <p><u>Fish Edibility</u>:? Monitoring Gap!</p>
<p>Decision-making Guide</p>	<p>ID problems</p> <p>Prioritize problems</p> <p>Geo-target problems</p>	<p>More monitoring needed + stressor / sources ID</p> <p>After stressor / source ID</p> <p>Lower watershed (where?)</p>
<p>Public Accounting</p>	<p>Trends (2000-2010)</p>	<p>Reference sites still in good condition, lower watershed did not improve (water programs don't work? Too much focus on stormwater?)</p>
<p>Coordinate Monitoring</p>	<p>Information Inventory</p> <p>ID information gaps</p>	<p>Search for all datasets</p> <p>Many spatial and temporal gaps, more/other indicators</p>



Successful Implementation of Watershed Report Cards

- Easy-to-use, automated system
- Framework is flexible enough to allow changes to indicators and criteria
- Necessary information is provided
- Powerful tool to disseminate data for mixed audience
- Learned from data and data gaps



Overview

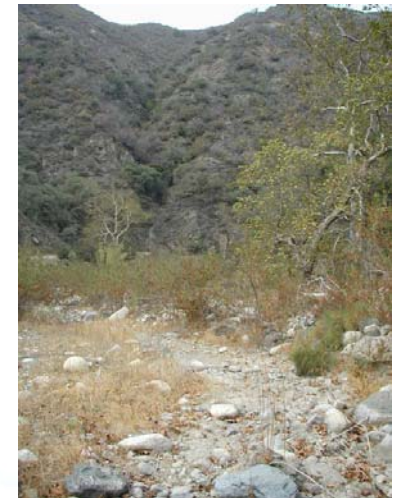
- Communication of Monitoring Data in the San Diego Region
- Massachusetts Report Card System and its Automation
- Application of Report Card System in the San Diego Region
- **Next Steps**



Next Steps

- Use collaborative approach with stakeholders
- Develop appropriate criteria for the San Diego region
- Develop monitoring program based on report cards
- Apply to other watersheds in the San Diego region
- Apply to other waterbodies in the San Diego region





Questions?
ibusse@waterboards.ca.gov

