

What areas of watershed management are we assessing?



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What are the uses (and best uses) for each assessment?

Watershed Assessment Matrix

TABLE A: What areas of watershed management are Methods we assessing?

What are the uses (and best uses) for each assessment?

Watershed Assessment Matrix v.1

TABLE A: What areas of watershed management are Methods we assessing?

Stream Morphology

Landscape and Stream Channel Equilibrium and Evolution

Floodplain and Floodway Designation

Stormwater Runoff

Hydrology and Hydraulics

Sediment Supplies and Dynamics

Water Quality

Indicators of Watershed Health

Stream Corridor

Riparian Systems

Instream Habitat

Bird Habitat

Fish Habitat

Amphibian and Reptile Habitat

Table A: Assessment Methods - What area(s) of watershed management are we assessing?

Score Hard Hood Hard Score Hard Cook Hard Cook

No.	Assessment Methods	Acronym	Description (Developer)	1	<u>/ &</u>	<i>/ 's</i>				atego		<u> </u>	/ <u>v</u>		
	Stream Visual Assessment Protocol	SVAP	Qualitative evaluation of the condition of aquatic ecosystems of wadeable streams. (USDA NRCS)	х	х					х	х	х	х	х	х
	Guy Ziv														
2	InVEST Annual Water Yield model	InVEST-Water Yield	Estimates annual amount of water available for multiple users within				х								
3	InVEST Sediment Retention Model	InVEST- Sediment	Estimate the amount of sediments exported and retained on the landscape	х				х			х				
4	InVEST Nutrient Retention model	InVEST-Nutrient	Estimate the amount of N and P exported and retained on the landscape	х					х		х				
5	InVEST Habitat Quality model	InVEST-Habitat Quality	Estimate the quality of terrestrial habitat based on intrinsic quality and spatial threats										х		х
	InVEST Habitat Risk Assessment model	InVEST-HRA	Estimate risk to habitat or species, based on aggregated stressors with different exposure and consequence levels										х		х
	Christina Sloop														
7	Bird - Area Search		http://data.prbo.org/cadc2/index.php?page =songbird-area-searches	х	х					х	х		х		
8	Birds - Point Counts		http://data.prbo.org/cadc2/index.php?page =songbird-point-counts	х	х					х	х		х		
9	IBI - macro invertebrates		http://water.epa.gov/type/wetlands/assess ment/fact5.cfm			х				х		х		х	
	Eric Stein														
10	California Rapid Assessment Method	CRAM	stream and wetland condition assessment (SCCWRP, SFEI, MLML)	х	х						х	х			
11	California Stream Condition Index	CSCI	benthic invertebrate assessment - replaces old IBI (SWRCB, DFG, USGS, SCCWRP)						х		x				
12	Periphyton IBI	PIBI	stream algae bioassessment (SCCWRP, SWRCB)						х		x				
13	Physical Habitat Assessment	РНАВ	stream physical habitat assessment (EPA, DFG, SWRCB)	х								х		х	

	le A: Assessment Methods - at area(s) of watershed manageme	nt are we asse	essing?	sur	san Modridos	and the case	Odway C	estoration and section and sec	d Hydra Sul Market Sul	popies and	d Dyrate	watership of	d Health and Health an	ta tradital	, Habitat	And and Res	Jille Habitat
No.	Assessment Methods	Acronym	Description (Developer)			/ 5	Ar	eas (a	ka ca	atego	ries)	/ W	/ v		_ v		
14	Hydromodification Risk Assessment	none	screens sites based on susceptibility to hydromod (SCCWRP, CSU-Ft. Collins)	х	х	х	х	х				х					
15	Healthy Watersheds Initiative Tom Griggs	HWI	GIS based assessment of condition and vulnerability at HUC 12 level (EPA)		х	х	х	х		х							
16	Riparian Restoration Design																
17	Joshua Fuller Stream Visual Assessment Protocol	SVAP	Qualitative evaluation of the condition of aquatic ecosystems of wadeable streams. (USDA NRCS)	х	х					х	x	х	x	х	х		
18	Intrinsic Potential Model	IP-km Model	Stream gradient, channel width, annual discharge model to assess potential production capacity of salmonid habitat				х					х		х			
19	Environmental Diagnostic Treatment Model	EDT Model	Use of many parameters to evaluate production capacity of potential salmonid				х					х		х			
20	CDFG Habitat Typing	HAB 8	Field observation methodology for assesses habitat features, quality and extent	х								х		х			
21	Expert Habitat Mapping	ЕНМ	High resolution assessment of salmonid habitat under a range of flow conditions				х					х		х			
22	PHABSIM Gretchen Hayes	PHABSIM	Habitat flow relationship model				х					х		х			
23	River Rutherford Reach Restoration Project		Monitoring protocols used for the Napa River Rutherford Reach Restoration Project	х	х			х			х	х		х	х		
24	Fraser Shilling California Water Plan, Water Sustainability Indicator Framework	CWP-SIF	Multiple indicator based approach, uses distance to target method (Shilling et al., 2007)	х	х	х	х	х	х	х	х	х	х	х	х		
25																	

What areas of watershed management are we assessing?

TABLE B: What are the uses (and best uses) for each Uses assessment?

Watershed Assessment Matrix v.1

TABLE B: What are the Uses uses (and best uses) for each assessment?

List of Uses

1 ECOLOGICAL & SYSTEM FUNCTIONS

- 1.1 Stream channel geomorphic functioning
- 1.2 Floodplain and floodway functions
- 1.3 Riparian functions
- 1.4 Groundwater recharge and protection

2 REGULATORY & MANGEMENT

- 2.1 Regulatory programs
- 2.2 Stormwater management
- 2.3 Emergency responses to floods and fire
- 2.4 Prevent and or treat water pollution
- 2.5 Protection of endangered –threatened animals and plants

3 RESTORATION & PLANNING

- 3.1 Instream and floodplain protection or restoration
- 3.2 Restoration design
- 3.3 Land use planning
- 3.4 Prioritizing projects and programs
- 3.5 Protection or acquisition of open space and refuges

4 RESTORATION: HABITAT

- 4.1 Fish habitat protection-enhancement
- 4.2 Bird habitat protection-enhancement
- 4.3 Aquatic amphibian, reptile, insect, mammalian habitat

5 ANTHROPOGENIC & OTHER USES

- 5.1 Research
- 5.2 Historical heritage
- 5.3 Recreational values
- 5.4 Educational-communication
- 5.5 Green house gas reduction-climate change adaptability

MATRIX v.1: Watershed / Waterway Assessment Methods

Table B: Use and Critique - What are the best use(s) for each assessment?

Definitions and Instructions

- 1. Assessment Method: Name or acronym from Table A: Assessment Methods
- 2. Environmental Condition Based: method assesses physical condition(s), e.g. characteristics of the channel and/or floodplain.
- 3. <u>Ecological Function & Process Based:</u> method assesses function(s) and process(es), e.g. fish and bird surveys; estimates of sediment transport.
- 4. Communication Based: method assesses overall 'how we're doing'; e.g. indicators of overall health; report card.
- 5. <u>Uses, by Number:</u> Reference the "List of Uses" to indicate the number of the use(s) associated with the assessment method.
- 6. <u>Method and Use Applicability</u>: Indicate the applicability of the assessment method to each associated use: (f)=fully; p)=partially; (na)=not applicable.

[1] Assessment Methods	[2] Environmental Condition based Check if applicable	Function & Process	[4] Communication based Check if applicable	[5] Uses, by number Reference the list at right to indicate associated uses.	Indi app	Applicate the substitution of the substitution	the lity of
InVEST-WaterYield		х		3.3			
InVEST-Sediment		х		1.1 1.3 2.1 3.4	X	Х	

[1] Assessment Methods	[2] Environmental Condition based Check if applicable	hased	[4] Communication based Check if applicable	[5] Uses, by number Reference the list at right to indicate associated uses.	[6] Applicability Indicate the applicability of each use:		
					<i>(f)</i>	(p)	(na)
				1.1		Х	
				1.3		X	
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1				2.1		Х	
InVEST-Nutrient		X		2.4		Х	
				3.4	Х		
				2.5		Х	
				3.5	Х		
				4.2	Х		
InVEST-HabitatQuality	X						
				2.5		Х	
				3.5	Х		
In VECT LIDA			.,	4.2		Х	
InVEST-HRA			Х				
				1.3		Х	
				2.2		Х	
IBI - Macroinvertebrates	X	X	х				
				1.2		Χ	
				1.3	<u> </u>	Х	
Riparian bird surveys	X	X	x	4.3		X	
				5.1	5.1		
					1		
					1		

[1] Assessment Methods	[2] Environmental Condition based Check if applicable	[3] Ecological Function & Process based Check if applicable	[4] Communication based Check if applicable	[5] Uses, by number Reference the list at right to indicate associated uses.	India app	h use.	he lity of
CRAM	х		x	5.4 1.1 1.3 2.1 3.4 3.1		Х	
CSCI	х	х	х	2.1 2.4 3.4 3.1			
PIBI	х	х	х	2.1 2.4 3.4 3.1			
PHAB	х		х	1.1 2.1 2.4 3.4 4.1			
Hydromodification Risk Assessment				1.1 1.2 2.1 2.2 3.1 3.3			

[1] Assessment Methods	[2] Environmental Condition based Check if applicable	[3] Ecological Function & Process based Check if applicable	[4] Communication based Check if applicable	[5] Uses, by number Reference the list at right to indicate associated uses.	Indi	lity of	
HWI	х	Х	х	2.1 3.3 3.4 3.5 5.4			
Riparian Restoration Design							
Site Assessment for Horticultural Potential	х			3.2,	X		
Assessment of site-specific hydrology - Flooding, ground- water table		х		3.2	X		
Public Safety - Flooding Issues - Hydraulic Modeling			x	1.2 1.3 2.3 3.2	X X X	Х	

[1] Assessment Methods	[2] Environmental Condition based Check if applicable	[3] Ecological Function & Process based Check if applicable	[4] Communication based Check if applicable	[5] Uses, by number Reference the list at right to indicate associated uses.		olicab cate t licabi h use (p)	the lity of
Assessment of wildlife use			х	4.2	X		
IP-KM	х	х		2.1 2.5 4.1 3.2		X X X X	
EDT	х	х		2.1 2.5 4.1 3.2			
HAB 8				2.1 2.5 4.1 3.2		X X X X	
EHM				2.1 2.5 4.1 3.2		X X X X	

[1] Assessment Methods	[2] Environmental Condition based Check if applicable	[3] Ecological Function & Process based Check if applicable	[4] Communication based Check if applicable	[5] Uses, by number Reference the list at right to indicate associated uses.	Indi app	Applicability andicate the applicability each use:	
				2.1		Χ	
				2.5		Х	
PHABISM						Х	
PHABISIVI				4.1		Х	
				3.2		Х	
				1.1		Χ	
_				1.3		Χ	
Napa River Rutherford Reach	X	X	x	3.1		Х	
Restoration	,	,		3.2	1	Х	
				4.1		Х	
				4.4			
		1.1	1.1	X			
				1.4	X		
				2.1	X		
				2.2	X		
				2.4	X		
CWP-SIF	X	X	Х	2.5	Х		
				3.3	Х		
				4.1	Х		
				4.3	Х		
				5.1	Х		
				5.4	Х		
					<u> </u>		

INPUT AND COMMENTS:

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