

Non-native Invasive Invertebrate Form

Date	Surveyors (circle recorder)	General Site Description			
9/5/2017	AK, AL, NH, (SP)	COVE EAST OF MARINA, SE PART OF SILVERWOOD LAKE			
Site Number	Shoreline or Offshore	Substrate Type ¹		Bedrock (smooth or rough); boulder (large or small); cobble, gravel (coarse or fine); sand, fines, hardpan, wood; concrete/asphalt; Other (see Description below); or unknown. See below for size class descriptions.	
		Dominant	Sub-Dom		
Camera ID	Shelby	GPS ID	IPM-01		
NNII Code ² & Occ. No.	# of Individ	Life Stage	UTMs	Photo#	Description:
CORFLU 1A-01	1			2312	ASIAN CLAM (HALF-DEAD SHELL)
POMCAN 1A-02	1				FOUND AT COVE (GRAVEL, COARSE) POSSIBLY CHANNELLED APPLE SNAIL: N/Amm (LIVE)
UNK 1B-03	1				
CORFLU 1B-04	1			2313-2314	DEAD HALF SHELL
POMCAN 1D-05	50				(MAY CHANNELLED APPLE SNAIL
POMCAN 1E-06	12				SMALL CHANNELLED APPLE SNAIL
CORFLU 1F-07	6			2316	POSS CORFLU
* POTANT RADAUR 1F-08	1			2316	LIVE POSS RAD ANZ? → NON-ANS
* POTANT RADAUR 1H-09	2			-	EUROPEAN EAR SNAIL? → NON-ANS
* POTANT 1I-10	4			2317	POSSIBLY NZ MUD SNAIL? Physa sp.

QA/QC	Intials:	Date:			
1 Source: SWAMP					
Stream Habitat					
Characterization					
Form					
Size	Size Class	Common Size Reference	Size	Size Class	Common Size Reference
>4m	Bedrock, smooth	larger than a car	2-16 mm	gravel, fine	ladybug to marble
>4m	Bedrock, rough	larger than a car	0.06-2 mm	sand	gritty to ladybug
1-4 m	Boulder, large	meter stick to car	<0.06 mm	hardpan (consolidated fines)	
25 cm - 1.0 m	Boulder, small	basketball to meter stick	NA	wood	
64 - 250 mm	Cobble	tennis ball to basketball	NA	concrete/asphalt	
16-64 mm	gravel, coarse	marble to tennis ball	NA	other	

² RADAUR = Radix auricularia = European ear snail; CORFLU = Corbicula fluminea = Asian clam; DREROS = Drassina rostriformis bugensis = Quagga mussel; DREPOL = D. polymorpha = Zebra mussel; POT ANT = Potamopyrgus antipodarum = NZ mudsnail; POMCAN = Pomacea canaliculata = channeled apple snail; PROCLA = Procambarus clarkii = red swamp crayfish

* "POTANT" ID'd AS Physa sp. ∴ NON-ANS.
 RADAUR ID'd AS Physa sp. ∴ NON-ANS.

Non-native Invasive Invertebrate Form (Page 2)

Date: 9/5/2017	
Time: 13:54 - 16:00	
Surveyors: AN, AL, NH (SP)	
Site Number: 1	

Shoreline Points	Dominant Substrate Type	Subdominate Substrate Type
1A	SAND	FINE GRAVEL
1B	FINE GRAVEL	COARSE GRAVEL
1C	SAND	
1D	SAND	
1E	SAND	

Offshore Points	Depth	Dominant Substrate Type	Subdominate Substrate Type
1F	7.8 FT	FINES/SILT	
1G	11.9 FT	FINES/SILT	
1H	6.0 FT	SILT/FINES	-
1I	10.1 FT	SILT/FINES	-
1J	11.3 FT	SILT/FINES	-
Average Depth	9.42 FT	-	-

Water Quality	
Temperature:	24.77 °C
SpC:	0.213 mS/cm
DO	6.19 mg/L
pH	7.76 units
Depth	1.4m
Turbidity	0.0 NTU

Non-native Invasive Invertebrate Form

Date	Surveyors (circle recorder)	General Site Description			
9/6/2017	AN, AL, NL, (SP)	SWAMPWOOD LAKE, WEST OF MARINIA			
Site Number	Shoreline or Offshore	Substrate Type ¹		Bedrock (smooth or rough); boulder (large or small); cobble; gravel (coarse or fine); sand, fines, hardpan, wood; concrete/asphalt; Other (see Description below); or unknown. See below for size class descriptions.	
		Dominant	Sub-Dom		
2	BOTH	-	-		
Camera ID	GPS ID				
SURVEY		1PM -			
NNII Code ² & Occ. No.	# of Individ	Life Stage	UTMs	Photo#	Description:
POTANT 2A-11	1				WHITISH SHELL - SPICAL
POTANT 2C-12	1			2329-2330	DARK CONCH-LIKE SHELL
POTANT 2F-13	1			2331	DARK CONCH-LIKE SHELL
POTANT 2H-14	1			2333 2332-	PALE/TRANSPARENT SHELL
POTANT 2I 15	1			2334	BLACK SPIRAL
POTANT 2J 16	2			2337	2 BLACK CONCHES

QA/QC	Intials:	Date:				
<small>1 Source: SWAMP</small>	Size	Size Class	Common Size Reference	Size	Size Class	Common Size Reference
<small>Stream Habitat</small>	>4m	Bedrock, smooth	larger than a car	2 - 16 mm	gravel, fine	ladybug to marble
<small>Characterization</small>	>4m	Bedrock, rough	larger than a car	0.06 - 2 mm	sand	gritty to ladybug
<small>Form</small>	1-4 m	Boulder, large	meter stick to car	< 0.06 mm	hardpan (consolidated fines)	
	25 cm - 1.0 m	Boulder, small	basketball to meter stick	NA	wood	
	64 - 250 mm	Cobble	tennis ball to basketball	NA	concrete/asphalt	
	18 - 64 mm	gravel, coarse	marble to tennis ball	NA	other	

2 RADAUR = Radix auricularia = European ear snail; CORFLU = Corbicula fluminea = Asian clam; DREROS = Drassina rostriformis bugensis = Quagga mussel; DREPOL = D. polymorpha = Zebra mussel; POT ANT = Potamopyrgus antipodarum = NZ mudsnail; POMCAN = Pomacea canaliculata = channeled apple snail; PROCLA = Procambarus clarkii = red swamp crayfish

Non-native Invasive Invertebrate Form (Page 2)

Date: 9/6/2017	
Time: 0815 - 09:50	
Surveyors: AN, AL, NH, (SP)	
Site Number: Z	

Shoreline Points	Dominant Substrate Type	Subdominate Substrate Type
2A	SANDY	COARSE GRAVEL
2B	SANDY	COARSE
2C	SANDY	COARSE
2D	SANDY	FINE
2E	SANDY	FINE

Offshore Points	Depth	Dominant Substrate Type	Subdominate Substrate Type
2F	6.5 FT	SILT	SAND
2G	7.0 FT	GRAVEL (COARSE)	SAND
2H	9.2 FT	GRAVEL (COARSE)	SAND
2I	6.5 FT	SAND (COARSE)	SILT
2J	6.5 FT	SILT	GRAVEL (COARSE)
Average Depth	7.14 FT	/	/

Water Quality	
Temperature:	24.55 °C
SpC:	0.213 mS/cm
DO	5.96 mg/L
pH	7.99 units
Depth	1.3 m
Turbidity	0.0 NTU

Non-native Invasive Invertebrate Form

Date	Surveyors (circle recorder)	General Site Description			
9/6/2017	AN, AL, NH, SP.	SILVERWOOD LAKE, WEST SIDE			
Site Number	Shoreline or Offshore	Substrate Type ¹		Bedrock (smooth or rough); boulder (large or small); cobble; gravel (coarse or fine); sand, fines, hardpan, wood; concrete/asphalt; Other (see Description below); or unknown. See below for size class descriptions.	
		Dominant	Sub-Dom		
3					
CameraID	GPS ID				
shelby					
NNII Code ² & Occ. No.	# of Individ	Life Stage	UTMs	Photo#	Description:
3x-17	2			2336	PART OF VISUAL LARGE BLACK SPIRAL → NON-AIS
POMCAN 3x-18	1				CHANN-ELED APPLE SNAIL (LG)
3x-19	2				COACH-LIKE → NON AIS
POMCAN 3x-20	4			2339	POSS SMALL CHANN-ELED APPLE SNAIL
3F-21	1			2346	LT COARSED SPIRAL COACH → NON-AIS

QA/QC	Initials:	Date:	
1 Source: SWAMP	Stream Habitat	Characterization	Form
Size	Size Class	Common Size Reference	Common Size Reference
>4m	Bedrock, smooth	larger than a car	2 - 16 mm gravel, fine ladybug to marble
>4m	Bedrock, rough	larger than a car	0.06 - 2 mm sand gritty to ladybug
1-4 m	Boulder, large	meter stick to car	<0.06 mm hardpan (consolidated fines)
25 cm - 1.0 m	Boulder, small	basketball to meter stick	NA wood
64 - 250 mm	Cobble	tennis ball to basketball	NA concrete/asphalt
18 - 64 mm	gravel, coarse	marble to tennis ball	NA other

2 RADAUR = Radix auricularia = European ear snail; CORFLU = Corbicula fluminea = Asian clam; DREROS = Dressina rostriformis bugensis = Quagga mussel; DREPOL = D. polymorpha = Zebra mussel; POT ANT = Potamopyrgus antipodarum = NZ mudsnail; POMCAN = Pomacea canaliculata = channeled apple snail; PROCLA = Procambarus clarkii = red swamp crayfish

Non-native Invasive Invertebrate Form (Page 2)

Date: 9/6/2017	
Time: 10:08-10:54	
Surveyors: AH, AL, NH, SF	
Site Number: 3	

Shoreline Points	Dominant Substrate Type	Subdominate Substrate Type
3A	Bedrock	SAND
3B	Bedrock	SAND
3C	Bedrock	SAND
3D	Bedrock	SAND
3E	Bedrock	SAND

Offshore Points	Depth	Dominant Substrate Type	Subdominate Substrate Type
3F	8.8 FT	SILT	SAND
3G	9.0 FT	FINE SAND	SILT
3H	18.1 FT	COARSE GRAVEL	FINE GRAVEL
3I	12.0 FT	COARSE GRAVEL	BLACK SILT
3J	10.0 FT	COARSE GRAVEL	SILT
Average Depth	11.38 FT		

Water Quality	
Temperature:	25.11 °C
SpC:	0.213 mS/cm
DO	6.49 mg/L
pH	8.56 units
Depth	1.3 meters
Turbidity	0.0 NTU

Non-native Invasive Invertebrate Form

Date	Surveyors (circle recorder)	General Site Description			
9/6/2017	AW, AL, NH, (SP)				
Site Number	Shoreline or Offshore	Substrate Type ¹		Bedrock (smooth or rough); boulder (large or small); cobble; gravel (coarse or fine); sand, fines, hardpan, wood; concrete/asphalt; Other (see Description below); or unknown. See below for size class descriptions.	
		Dominant	Sub-Dom		
4					
Camera ID	GPS ID				
NNII Code ² & Occ. No.	# of Individ	Life Stage	UTMs	Photo#	Description:
POMCAN 4A-22	3			2349	CHANNELED APPLE SNAIL
CORFLU 4C-23	100			2354	ASIAN CLAM SHELLS LITERING CAVE AREA (100's) -
* POTANT 4D-24	4			2355	SMALL BROWN CONCH-LIKE - LIVE
4H-25	1			2356	BLACK SPIRAL (H) → NON-AIS
* POTANT 4I-26	1			2357	CONCH
4J-27					

QA/QC	Intials:	Date:				
1 Source: SWAMP						
Stream Habitat						
Characterization						
Form						
Size	Size Class	Common Size Reference	Size	Size Class	Common Size Reference	
>4m	Bedrock, smooth	larger than a car	2 - 16 mm	gravel, fine	ladybug to marble	
>4m	Bedrock, rough	larger than a car	0.06 - 2 mm	sand	gritty to ladybug	
1-4 m	Boulder, large	meter stick to car	≤ 0.06 mm	hardpan, (consolidated fines)		
25 cm - 1.0 m	Boulder, small	basketball to meter stick	NA	wood		
64 - 250 mm	Cobble	tennis ball to basketball	NA	concrete/asphalt		
16 - 64 mm	gravel, coarse	marble to tennis ball	NA	other		

² RADAUR = Radix auricularia = European ear snail; CORFLU = Corbicula fluminea = Asian clam; DREROS = Drassina rostriformis bugensis = Quagga mussel; DREPOL = D. polymorpha = Zebra mussel; POT ANT = Potamopyrgus antipodarum = NZ mudsnail; POMCAN = Pomacea canaliculata = channeled apple snail; PROCLA = Procambarus clarkii = red swamp crayfish

* "POTANT" 10'd as Physa sp., a NON-AIS SPECIES.

Non-native Invasive Invertebrate Form (Page 2)

Date: 9/6/2017	
Time: 11:04	
Surveyors: AN, AL, NH (SP)	
Site Number: 4	

Shoreline Points	Dominant Substrate Type	Subdominate Substrate Type
4A	COBBLE	COARSE
4B	BOULDER	COARSE SAND
4C	LG BOULDER	COARSE SAND
4D	FINE SAND	COARSE SAND
4E	COARSE GRAVEL	BEDROCK

Offshore Points	Depth	Dominant Substrate Type	Subdominate Substrate Type
4F	7.5 FT	SILT	COARSE SAND
4G	6.1 FT	COARSE GRAVEL	—
4H	7.5 FT	SILT	FINE SAND
4I	3.1 FT	COARSE SAND	SILT
4J	6.1 FT	COARSE SAND	SILT
Average Depth	6.06 FT	/	/

Water Quality	
Temperature:	24.89 °C
SpC:	0.209 ms/cm
DO	6.52
pH	8.42
Depth	1.3 m
Turbidity	8.4 NTU

Non-native Invasive Invertebrate Form

Date	Surveyors (circle recorder)	General Site Description			
9/6/2017	AN, AL, NH, (SP)				
Site Number	Shoreline or Offshore	Substrate Type ¹		Bedrock (smooth or rough); boulder (large or small); cobble; gravel (coarse or fine); sand, fines, hardpan, wood; concrete/asphalt; Other (see Description below); or unknown. See below for size class descriptions.	
		Dominant	Sub-Dom		
5					
Camera ID	GPS ID				
SHIPLEY					
NNII Code ² & Occ. No.	# of Individ	Life Stage	UTMs	Photo#	Description:

QA/QC	Initials:	Date:				
<small>¹ Source: SWAMP</small>	Size	Size Class	Common Size Reference	Size	Size Class	Common Size Reference
<small>Stream Habitat</small>	>4m	Bedrock, smooth	larger than a car	2 - 16 mm	gravel, fine	ladybug to marble
<small>Characterization</small>	>4m	Bedrock, rough	larger than a car	0.06 - 2 mm	sand	gritty to ladybug
<small>Form</small>	1-4 m	Boulder, large	meter stick to car	< 0.06 mm	hardpan (consolidated fines)	
	25 cm - 1.0 m	Boulder, small	basketball to meter stick	NA	wood	
	64 - 250 mm	Cobble	tennis ball to basketball	NA	concrete/asphalt	
	16 -64 mm	gravel, coarse	marble to tennis ball	NA	other	

² RADAUR = Radix auricularia = European ear snail; CORFLU = Corbicula fluminea = Asian clam; DREROS = Dressina rostriformis bugensis = Quagga mussel; DREPOL = D. polymorpha = Zebra mussel; POT ANT = Potamopyrgus antipodarum = NZ mudsnail; POMCAN = Pomecea canaliculata = channeled apple snail; PROCLA = Procambarus clarkii = red swamp crayfish

Non-native Invasive Invertebrate Form (Page 2)

Date: 9/6/2017	
Time: 12:15 - 12:39	
Surveyors: AJW, AL, NH, (SP)	
Site Number: 5	

MOVE AWAY FROM DAM - BOATS MUST BE SEPT FROM DAM. MOVED EAST OF DAM HOWEVER ROCKY SHORES

Shoreline Points	Dominant Substrate Type	Subdominate Substrate Type
5A - N/A	NO SHORELINE	
5B -	↓	
5C -		
5D -		
5E - ↓		

Offshore Points	Depth	Dominant Substrate Type	Subdominate Substrate Type
5F	12.0 FT	SMALL BOUNDER	-
5G	12.8 FT	SMALL BOUNDER	-
5H	14.0 FT	SMALL BOUNDER	COARSE SAND
5I	8.6 FT	JUNK BOUNDER	-
5J	8.8 FT	SMALL BOUNDER	-
Average Depth	11.24 FT	-	-

10

Water Quality	
Temperature:	25.07°C
SpC:	0.211 mS/cm
DO	6.80 mg/L
pH	8.44
Depth	2.2
Turbidity	11.8 NTU

Non-native Invasive Invertebrate Form

Date	Surveyors (circle recorder)	General Site Description			
9/6/2017	AN, AL, NH, (SP)				
Site Number	Shoreline or Offshore	Substrate Type ¹		Bedrock (smooth or rough); boulder (large or small); cobble, gravel (coarse or fine); sand, fines, hardpan, wood; concrete/asphalt; Other (see Description below); or unknown. See below for size class descriptions.	
		Dominant	Sub-Dom		
6					
Camera ID	GPS ID				
	SHIKVEY				
NNII Code ² & Occ. No.	# of Individ	Life Stage	UTMs	Photo#	Description:
POMCAN 6A-27	8			2364	DEAD (EMPTY) CHANNELLED APPLE SNAIL SCATTERED AT BEACH AT 6A (1 LIVE)
6A-28	1			2360-2365	BLACK SPIRAL - INTERNAL SPIRAL → NON-AIS
* POTANT 6A-29	1			2367	COIL-LIKE → NON-AIS
POMCAN 6D-30	3			2371	SPRAL w/ OUTSIDE COIL (PROTRUDING) - CHANNELLED APPLE SNAIL

QA/QC	Intials:	Date:						
1 Source: SWAMP			Size	Size Class	Common Size Reference	Size	Size Class	Common Size Reference
Stream Habitat			>4m	Bedrock, smooth	larger than a car	2 - 16 mm	gravel, fine	ladybug to marble
Characterization			>4m	Bedrock, rough	larger than a car	0.06 - 2 mm	sand	gritty to ladybug
Form			1-4 m	Boulder, large	meter stick to car	≤0.06 mm	hardpan (consolidated fines)	
			25 cm - 1.0 m	Boulder, small	basketball to meter stick	NA	wood	
			64 - 250 mm	Cobble	tennis ball to basketball	NA	concrete/asphalt	
			18 - 64 mm	gravel, coarse	marble to tennis ball	NA	other	

2 RADAUR = Radix auricularia = European ear snail; CORFLU = Corbicula fluminea = Asian clam; DREROS = Dressina rostriformis bugensis = Quagga mussel; DREPOL = D. polymorpha = Zebra mussel; POT ANT = Potamopyrgus antipodarum = NZ mudsnail; POMCAN = Pomacea canaliculata = channeled apple snail; PROCLA = Procambarus clarkii = red swamp crayfish

* "POTANT" ID'd AS *Physa* sp., a NON-AIS SPECIES.
 2739 Gateway Oaks Drive, Suite 200, Sacramento, CA 95833
 Phone (916) 679-8700

HDR, Inc.

Non-native Invasive Invertebrate Form (Page 2)

Date: 9/6/2017	
Time: 12:45 - 13:36	
Surveyors: AH, DL, NH (SP)	
Site Number: 6	

Shoreline Points	Dominant Substrate Type	Subdominate Substrate Type
6A	COARSE SAND	FINE SAND
6B	COARSE SAND	FINE SAND
6C	DEBRIS	SAND
6D	COARSE SAND	COBBLE
6E	COARSE SAND	COBBLE

Offshore Points	Depth	Dominant Substrate Type	Subdominate Substrate Type
6F	6.9 FT	COBBLE	SMALL BOUNDER
6G	10.4 FT	FINE GRAVEL	SILT
6H	5.9 FT	COARSE SAND	COARSE GRAVEL
6I	7.2 FT	SILT	COARSE SAND
6J	6.9 FT	SILT	GRAVEL
Average Depth	7.46 FT	—	—

Water Quality	
Temperature:	25.44 °C
SpC:	0.213 mS/cm
DO	6.20 mg/L
pH	8.61 units
Depth	1.4 m
Turbidity	14.4 NTU

Non-native Invasive Invertebrate Form

Date	Surveyors (circle recorder)	General Site Description			
9/6/2017	AL, AL, HH, (SP)				
Site Number	Shoreline or Offshore	Substrate Type ¹		Bedrock (smooth or rough); boulder (large or small); cobble; gravel (coarse or fine); sand, fines, hardpan, wood; concrete/asphalt; Other (see Description below); or unknown. See below for size class descriptions.	
		Dominant	Sub-Dom		
7					
Camera ID	GPS ID				
NNII Code ² & Occ. No.	# of Individ	Life Stage	UTMs	Photo#	Description:
POMCAN 7A-31	3			2371	BLACK CONCH-LIKE (SMALL)

QA/QC Initials: _____ Date: _____

1 Source: SWAMP Stream Habitat Characterization Form	Size	Size Class	Common Size Reference	Size	Size Class	Common Size Reference
	>4m	Bedrock, smooth	larger than a car	2 - 16 mm	gravel, fine	ladybug to marble
	>4m	Bedrock, rough	larger than a car	0.06 - 2 mm	sand	gritty to ladybug
	1-4 m	Boulder, large	refer stick to car	< 0.06 mm	hardpan (consolidated fines)	
	25 cm - 1.0 m	Boulder, small	basketball to meter stick	NA	wood	
	64 - 250 mm	Cobble	tennis ball to basketball	NA	concrete/asphalt	
	16 - 64 mm	gravel, coarse	marble to tennis ball	NA	other	

² RADAUR = Radix auricularia = European ear snail; CORFLU = Corbicula fluminea = Asian clam; DREROS = Dressina rostriformis bugensis = Quagga mussel; DREPOL = D. polymorpha = Zebra mussel; POT ANT = Potamopyrgus antipodarum = NZ mudsnail; POMCAN = Pomacea canaliculata = channeled apple snail; PROCLA = Procambarus clarkii = red swamp crayfish

Non-native Invasive Invertebrate Form (Page 2)

Date: 9/6/2017	
Time:	
Surveyors: AJ, AL, NH, (SP)	
Site Number: 9	

Shoreline Points	Dominant Substrate Type	Subdominate Substrate Type
7A -	SMALL BOUNDER	COBBLE
7B -	↓	↓
7C -	↓	↓
7D -	↓	↓
7E -	↓	↓

Offshore Points	Depth	Dominant Substrate Type	Subdominate Substrate Type
7F	7.4 FT	COBBLE	SMALL BOUNDER
7G	10.4 FT	COBBLE	SMALL BOUNDER
7H	9.9 FT	COBBLE	SMALL BOUNDER
7I	10.3 FT	SMALL BOUNDER	COBBLE
7J	14.6 FT	SMALL BOUNDER	COBBLE
Average Depth	10.52 FT	—	—

Water Quality	
Temperature:	24.70
SpC:	0.213
DO	6.05
pH	7.85
Depth	1.4 m
Turbidity	17.4 NTU

Non-native Invasive Invertebrate Form

Date	Surveyors (circle recorder)	General Site Description			
9/7/2017	AN, AL, NH, (SP)	SILVERWOOD LAKE, NE ARM OF LAKE			
Site Number	Shoreline or Offshore	Substrate Type ¹		Bedrock (smooth or rough); boulder (large or small); cobble, gravel (coarse or fine); sand, fines, hardpan, wood; concrete/asphalt; Other (see Description below); or unknown. See below for size class descriptions.	
		Dominant	Sub-Dom		
3					
Camera ID	GPS ID				
NNII Code ² & Occ. No.	# of Individ	Life Stage	UTMs	Photo#	Description:
POMCAN 8X-32	1			—	CHANNELED APPLE SNAIL - FLOATING SHELL
CORFLU 8F-33	1			2378	ASIAN CLAM
	8F-34	1		2379	SPIRAL SHELL - INVERTED COIL → NON-AS
	8F-35	1		2380	SPIRAL SHELL - PROTRUDING COIL → NON-AS
CORFLU 8I-36	1			2381	ASIAN CLAM
	8I-37	2		2382	INVERTED COIL SPIRAL → NON-AS
	8I-38	3		2383	PROTRUDING COIL SPIRAL → NON-AS
* POTANT 8J-39	1			2384	CONCH-LIKE

QA/QC	Intials:	Date:						
¹ Source: SWAMP			Size	Size Class	Common Size Reference	Size	Size Class	Common Size Reference
Stream Habitat			>4m	Bedrock, smooth	larger than a car	2-16 mm	gravel, fine	ladybug to marble
Characterization			>4m	Bedrock, rough	larger than a car	0.06 - 2 mm	sand	gritty to ladybug
Form			1-4 m	Boulder, large	meter stick to car	<0.06 mm	hardpan (consolidated fines)	
			25 cm - 1.0 m	Boulder, small	basketball to meter stick	NA	wood	
			64 - 250 mm	Cobble	tennis ball to basketball	NA	concrete/asphalt	
			18-84 mm	gravel, coarse	marble to tennis ball	NA	other	

² RADAUR = Radix auricularia = European ear snail; CORFLU = Corbicula fluminea = Asian clam; DREROS = Dressina rostriformis bugensis = Quagga mussel; DREPOL = D. polymorpha = Zebra mussel; POT ANT = Potamopyrgus antipodarum = NZ mudsnail; POMCAN = Pomacea canaliculata = channeled apple snail; PROCLA = Procambarus clarkii = red swamp crayfish

* "POTANT" 10'd AS *Physa* sp., a NON-AS species.

HDR, Inc.
2739 Gateway Oaks Drive, Suite 200, Sacramento, CA 95833
Phone (916) 679-8700

Non-native Invasive Invertebrate Form (Page 2)

Date: 9/7/2017	
Time: 0830 - 0901	
Surveyors: AN, AL, NH, SV	
Site Number: 0	

Shoreline Points	Dominant Substrate Type	Subdominate Substrate Type
9A	BEACH	SAND
8B	↓	↓
8C		
8D		
8E	↓	↓

Offshore Points	Depth	Dominant Substrate Type	Subdominate Substrate Type
8F	10.5 FT	SILT	FINE GRAVEL
8G	8.4 FT	-	-
8H	10.7 FT	SILT / FINES	SILT
8I	9.0 FT	SILT	-
8J	4.6 FT	FINE GRAVEL	COARSE SAND
Average Depth	8.64 FT	-	-

Water Quality	
Temperature:	24.66 °C
SpC:	0.212 MS/cm
DO	6.53 mg/L
pH	7.35 units
Depth	1.3 m
Turbidity	2.6 NTU

Non-native Invasive Invertebrate Form

Date	Surveyors (circle recorder)		General Site Description		
9/7/2017	AN, AL, NH, (SP)		NE SIDE/ARM OF SILVERWOOD LAKE, NEAR REC AREA		
Site Number	Shoreline or Offshore	Substrate Type ¹		Bedrock (smooth or rough); boulder (large or small); cobble; gravel (coarse or fine); sand, fines, hardpan, wood; concrete/asphalt; Other (see Description below); or unknown. See below for size class descriptions.	
		Dominant	Sub-Dom		
9					
Camera ID	GPS ID				
NNI Code ² & Occ. No.	# of Individ	Life Stage	UTMs	Photo#	Description:
9C-40	2			2385	INVERTED SPIRAL - VERY PROLIFIC → NON-AIS
* POTANT 9C-41	2			2386	CONCH-LIKE
9C-43	1			2387	SPIRAL → NON-AIS
CORFLU 9H-44	-			2391	ASIAN CLAM SHELLS (2 HALVES)
9J-45	1			2392	FLAT DISC — NON-AIS
POMCAN 9F-46	1			2393	BROKEN CHANNEL FODDER SNAIL
9F-47	1			2394	INVERTED SPIRAL → NON-AIS
* POTANT 9F-48	1			2395	CONCH-LIKE

QA/QC	Intials:	Date:				
1 Source: SWAMP Stream Habitat Characterization Form	Size	Size Class	Common Size Reference	Size	Size Class	Common Size Reference
	>4m	Bedrock, smooth	larger than a car	2-16 mm	gravel, fine	ladybug to marble
	>4m	Bedrock, rough	larger than a car	0.06 - 2 mm	sand	gritty to ladybug
	1-4 m	Boulder, large	meter stick to car	<0.06 mm	hardpan (consolidated fines)	
	25 cm - 1.0 m	Boulder, small	basketball to meter stick	NA	wood	
	64 - 250 mm	Cobble	tennis ball to basketball	NA	concrete/asphalt	
	16-64 mm	gravel, coarse	marble to tennis ball	NA	other	

² RADAUR = Radix auricularia = European ear snail; CORFLU = Corbicula fluminea = Asian clam; DREROS = Dressina rostriformis bugensis = Quagga mussel; DREPOL = D. polymorpha = Zebra mussel; POT ANT = Potamopyrgus antipodarum = NZ mudsnail; POMCAN = Pomacea canaliculata = channeled apple snail; PROCLA = Procambarus clarkii = red swamp crayfish

* "POTANT" 10'd as Physa sp., a non-AIS species

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Non-native Invasive Invertebrate Form (Page 2)

Date: 9/7/2017	
Time: 09:03 - 09:41	
Surveyors: AH, AL, NH (SP)	
Site Number: 9	

PHOTOS
2400 -
2401

Shoreline Points	Dominant Substrate Type	Subdominate Substrate Type
9A	Bedrock	Small Boulder
9B	Bedrock	Small Boulder
9C	SANDY	FINE GRAVEL
9D	Bedrock	Small Boulder
9E	Bedrock	Small Boulder

Offshore Points	Depth	Dominant Substrate Type	Subdominate Substrate Type
9F	10.9 FT	- COBBLE	-
9G	8.6 FT	- COBBLE	-
9H	12.9 FT	SILT	COARSE GRAVEL
9I	20.4 FT	COBBLE	SILT
9J	14.9 FT	SILT	COARSE GRAVEL
Average Depth	13.58 FT	-	-

Water Quality	
Temperature:	24.84 °C
SpC:	0.213 mS/cm
DO	5.58 mg/L
pH	8.34 units
Depth	1.5 m
Turbidity	0.8 NTU

Non-native Invasive Invertebrate Form

Date	Surveyors (circle recorder)	General Site Description			
9/7/2017	M, AN, NH (SP)	WE SIDE OF SILVERWOOD, AT QUAGGA AREA			
Site Number	Shoreline or Offshore	Substrate Type ¹		Bedrock (smooth or rough); boulder (large or small); cobble; gravel (coarse or fine); sand, fines, hardpan, wood; concrete/asphalt; Other (see Description below); or unknown. See below for size class descriptions.	
		Dominant	Sub-Dom		
10					
Camera ID	GPS ID				
NNII Code ² & Occ. No.	# of Individ	Life Stage	UTMs	Photo#	Description:
* POT ANT 10X-49	3			2396	CONCH-LIKE
RADAUR 10F-50	1			2397	L ^r CONCH-LIKE

QA/QC	Initials: _____	Date: _____				
1 Source: SWAMP	Size	Size Class	Common Size Reference	Size	Size Class	Common Size Reference
Stream Habitat	>4m	Bedrock, smooth	larger than a car	2 - 16 mm	gravel, fine	ladybug to marble
Characterization	>4m	Bedrock, rough	larger than a car	0.06 - 2 mm	sand	gritty to ladybug
Form	1-4 m	Boulder, large	meter stick to car	<0.06 mm	hardpan (consolidated fines)	
	25 cm - 1.0 m	Boulder, small	basketball to meter stick	NA	wood	
	64 - 250 mm	Cobble	tennis ball to basketball	NA	concrete/asphalt	
	16 - 64 mm	gravel, coarse	marble to tennis ball	NA	other	

2 RADAUR = Radix auricularia = European ear snail; CORFLU = Corbicula fluminea = Asian clam; DREROS = Dressina rostriformis bugensis = Quagga mussel; DREPOL = D. polymorpha = Zebra mussel; POT ANT = Potamopyrgus antipodarum = NZ mudsnail; POMCAN = Pomacea canaliculata = channelled apple snail; PROCLA = Procambarus clarkii = red swamp crayfish

Non-native Invasive Invertebrate Form (Page 2)

Date: 9/7/2017	
Time: 09:45 - 10:06	
Surveyors: AL, AN, NA, (SP)	
Site Number: 10	

PHOTOS
2398-
2399

Shoreline Points	Dominant Substrate Type	Subdominate Substrate Type
10A	BEDROCK SMOOTH	LARGE BOLDER
10B	↓	↓
10C	BEDROCK SMOOTH	BOLDER
10D	↓	↓
10E	↓	↓

Offshore Points	Depth *	Dominant Substrate Type	Subdominate Substrate Type
10F	31.6 FT	BEDROCK	FINE SAND
10G	29.8 FT	"	BOLDER
10H	20.8 FT	BEDROCK	BOLDER
10I	31.2 FT	"	"
10J	30.6 FT	"	"
Average Depth	$143.2/5 = 28.64\text{ FT}$	—	—

* SAMPLES
NOT 33 FT
OFFSHORE:
NO SHORELINE
> 100 FT DEEP
@ 33 FT
OFFSHORE

Water Quality	
Temperature:	25.71 °C
SpC:	0.210 mS/cm
DO	7.98 mg/L
pH	8.33 units
Depth	1.5 m
Turbidity	5.5 NTU

Non-native Invasive Invertebrate Form

Date	Surveyors (circle recorder)	General Site Description			
9/7/2017	AL, AN, NH, SP	EASTERN COVE OF SILVERWOOD LAKE			
Site Number	Shoreline or Offshore	Substrate Type ¹		Bedrock (smooth or rough); boulder (large or small); cobble; gravel (coarse or fine); sand, fines, hardpan, wood; concrete/asphalt; Other (see Description below); or unknown. See below for size class descriptions.	
		Dominant	Sub-Dom		
11					
Camera ID	GPS ID				
NNII Code ² & Occ. No.	# of Individ	Life Stage	UTMs	Photo#	Description:
POMCAN 11A-51	20			2404-2405	CHANNELED APPLE SNAIL IN WATER (DEAD + FLOATING) + 2 SNAIL SAMPLES
* POTANT RADAUR 11B-52	2			2402	COLICIT-LIKE
11B-53	1			2403	SMALL PINK SPIRAL → NON-AIS
* POTANT 11A-54	2			2408	COINCH-LIKE
CORFLU 11I-55	2			2409	ASIAN CLAM SHELLS (2 DEAD, 1 INTACT)
CORFLU 11J-56	2			2410	2 HALF PIECES OF ASIAN CLAM SHELLS

QA/QC	Intials:	Date:				
1 Source: SWAMP Stream Habitat Characterization Form	Size	Size Class	Common Size Reference	Size	Size Class	Common Size Reference
	>4m	Bedrock, smooth	larger than a car	2-16 mm	gravel, fine	ladybug to marble
	>4m	Bedrock, rough	larger than a car	0.06 - 2 mm	sand	gritty to ladybug
	1-4 m	Boulder, large	meter stick to car	<0.06 mm	hardpan (consolidated fines)	
	25 cm - 1.0 m	Boulder, small	basketball to meter stick	NA	wood	
	64 - 250 mm	Cobble	tennis ball to basketball	NA	concrete/asphalt	
	16 - 84 mm	gravel, coarse	marble to tennis ball	NA	other	

2 RADAUR = Radix auricularia = European ear snail; CORFLU = Corbicula fluminea = Asian clam; DREROS = Dressina rostriformis bugensis = Quagga mussel; DREPOL = D. polymorpha = Zebra mussel; POT ANT = Potamopyrgus antipodarum = NZ mudsnail; POMCAN = Pomacea canaliculata = channeled apple snail; PROCLA = Procambarus clarkii = red swamp crayfish

*"POTANT" ID'd as Physa sp, a non-AIS species

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Non-native Invasive Invertebrate Form (Page 2)

Date: 9/7/07	
Time: 10:18 - 11:14	
Surveyors: AL, AN, NH, (SP)	
Site Number: 11	

PHOTO #'S

2406
2407

Shoreline Points	Dominant Substrate Type	Subdominate Substrate Type
11A	FINE SANDS	COARSE SANDS
11B	FINE SANDS	COARSE SANDS
11C	COARSE SANDS	SMALL Boulders
11D	↓	↓
11E		

Offshore Points	Depth	Dominant Substrate Type	Subdominate Substrate Type
11F	6.5 FT	COARSE SANDS	—
11G	12.6 FT	SILT	COARSE SANDS
11H	18.1 FT	FINE GRAVEL	—
11I	8.6 FT	FINE GRAVEL	COARSE SANDS
11J	13.0 FT	SILT	COARSE SANDS
Average Depth	11.76 FT	—	—

Water Quality	
Temperature:	25.29 °C
SpC:	0.211 ms/cm
DO	7.6 mg/L
pH	7.87 units
Depth	1.4 m
Turbidity	9.8 NTU

Non-native Invasive Invertebrate Form

Date	Surveyors (circle recorder)	General Site Description			
9/7/2017	AL, AN, NH, (SP)	SOUTHEAST CORNER OF SILVERWOOD LAKE			
Site Number	Shoreline or Offshore	Substrate Type ¹		Bedrock (smooth or rough); boulder (large or small); cobble; gravel (coarse or fine); sand, fines, hardpan, wood; concrete/asphalt; Other (see Description below); or unknown. See below for size class descriptions.	
		Dominant	Sub-Dom		
12					
Camera ID	GPS ID				
NNII Code ² & Occ. No.	# of Individ	Life Stage	UTMs	Photo#	Description:
POTANT 12D-57	4			2411 2410-	COHELL-LIKE NZ MUDSNAIL?
12C-58	1				INVERTED SPIRAL → NON-ANT
POTANT 12B-59	1				LONGI-LIKE
POTANT 12E-60	3			2413	COHELL-LIKE
12F-61	1			2416	SMALL PINE INVERTED SPIRAL → NON-ANT
POTANT 12F-62	1			2417	LONGI-LIKE
POTANT 12F-63	2			2418	COHELL-LIKE

QA/QC	Intials:	Date:				
<small>1 Source: SWAMP</small>	Size	Size Class	Common Size Reference	Size	Size Class	Common Size Reference
Stream Habitat	>4m	Bedrock, smooth	larger than a car	2-16 mm	gravel, fine	ladybug to marble
Characterization	>4m	Bedrock, rough	larger than a car	0.06 - 2 mm	sand	gritty to ladybug
Form	1-4 m	Boulder, large	meter stick to car	<0.06 mm	hardpan, (consolidated) fines	
	25 cm - 1.0 m	Boulder, small	basketball to meter stick	NA	wood	
	64 - 250 mm	Cobble	tennis ball to basketball	NA	concrete/asphalt	
	18 - 64 mm	gravel, coarse	marble to tennis ball	NA	other	

2 RADAUR = Radix auricularia = European ear snail; CORFLU = Corbicula fluminea = Asian clam; DREROS = Dressina rostriformis bugensis = Quagga mussel; DREPOL = D. polymorpha = Zebra mussel; POT ANT = Potamopyrgus antipodarum = NZ mudsnail; POMCAN = Pomacea canaliculata = channeled apple snail; PROCLA = Procambarus clarkii = red swamp crayfish

Non-native Invasive Invertebrate Form (Page 2)

Date: 9/7/2017	
Time: 12:09	
Surveyors: AL, AH, NH, (Sr)	
Site Number: 12	

Shoreline Points	Dominant Substrate Type	Subdominate Substrate Type
12A	SMALL BOUNDER	COBBLE
12B	SMALL BOUNDER	COBBLE
12C	FINE SAND	COARSE SAND
12D	FINE SAND	COARSE SAND
12E	SMALL BOUNDERs	COARSE SAND

PHOTOS OF
SITE
2414-
2415

Offshore Points	Depth	Dominant Substrate Type	Subdominate Substrate Type
12F	12.9 FT	SILT	COARSE SAND
12G	9.0 FT	SILT	COARSE SAND
12H	9.0 FT	COARSE SAND	FINE SAND
12I	9.3 FT	FINE GRAVEL	SILT
12J	7.9 FT	SILT	COARSE SAND
Average Depth	9.62 FT	—	—

Water Quality	
Temperature:	25.39 °C
SpC:	0.212 mS/cm
DO	6.36 mg/L
pH	8.51 units
Depth	1.2 m
Turbidity	19.5 NTU