
The BOG
Willow Lake, Plumas County http://creagrus.home.montereybay.com/CA-PLU-WillowLake.html

Goals for Today

- Update the Review Panel on developments over the past year
- Group discussion of draft Wildlife Report
- Group discussion of draft Bass Lake Plan
- Preliminary discussion of plans for 2016 and beyond
- Make sure we hear from the Panel
  - Format for each item: Presentation, Panel, general discussion

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Item 2: Update on BOG and SWAMP

- Wildlife Study (2012-13)
  - No reporting in 2014
- "Clean Lakes" Study (2014)
  - Successful sampling campaign
  - Analyses and data management
  - Draft report in July 2015, Final in September

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Item 2: Update on BOG and SWAMP

- Bass Lake Monitoring Design (2015-)
  - SWAMP reorganization has continued
  - Development of three-year contracts
  - Contract processing – expected June 1
- BOG Business Plan
  - Recommended by the Triennial Audit Report
  - Report on resource needs
  - Due December
- SWAMP planning timeline

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Approved Multi-Year Workplan

		Actual	Planning						
		2013/14	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**	**2020/21**
Management, Coordination	Project management and coordination, peer review: SWAMP and CWQMC (SFEI)	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000
	Project management and coordination, monitoring design, data validation, infrastructure: SWAMP (MPSL)	$76,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000
Sport Fish	Clean Lakes Study	$263,457							
	Status and Trend Monitoring (Lakes, Coast, Rivers)		$280,000	$360,000	$360,000	$360,000	$460,000	$460,000	$360,000
	Coastal Fish (Round 2)								
	Statewide Synthesis Report (SWAMP + Other)					$100,000			$100,000
Portal	Upload, Maintenance, Minor Enhancements	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000
	UIUX Survey and Add Functionality								
	Upgrade Code: Open Source Base Map			$30,000					
Cyanotoxins	Cyanotoxin White Paper	$50,000							
	Cyanotoxin Tissue Monitoring								
	Cyanobacteria		$150,000	$100,000	$100,000				
Wildlife	?? - opportunistic partnering?								
CECs	Anticipate this being covered by others								
Miscellaneous	SQO	$7,500							
	TOTAL	$511,957	$620,000	$680,000	$650,000	$650,000	$650,000	$650,000	$650,000

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Item 3: Draft Report on the Wildlife Study

- Presentation and discussion today
- Written comments due 4/29
- Desired outcome: Input to guide preparation of the final report and future development and application of the exposure estimation tool.

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Wildlife Study: Discussion/Review Points

1. Was the study and the analysis technically sound?
2. Did we answer the management questions?
3. Is this a tool that will be used by managers?
4. Is further development needed to make it useful?

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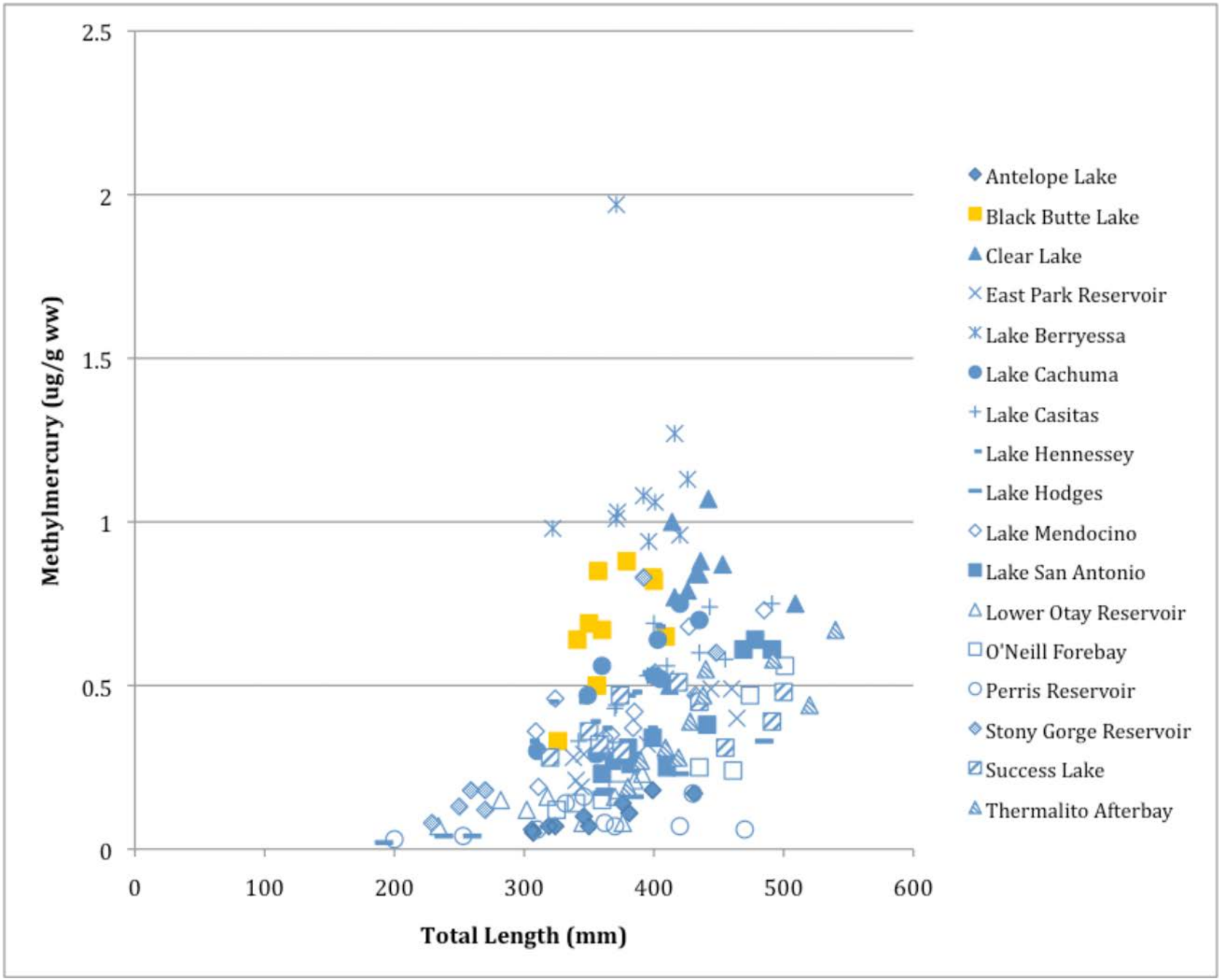
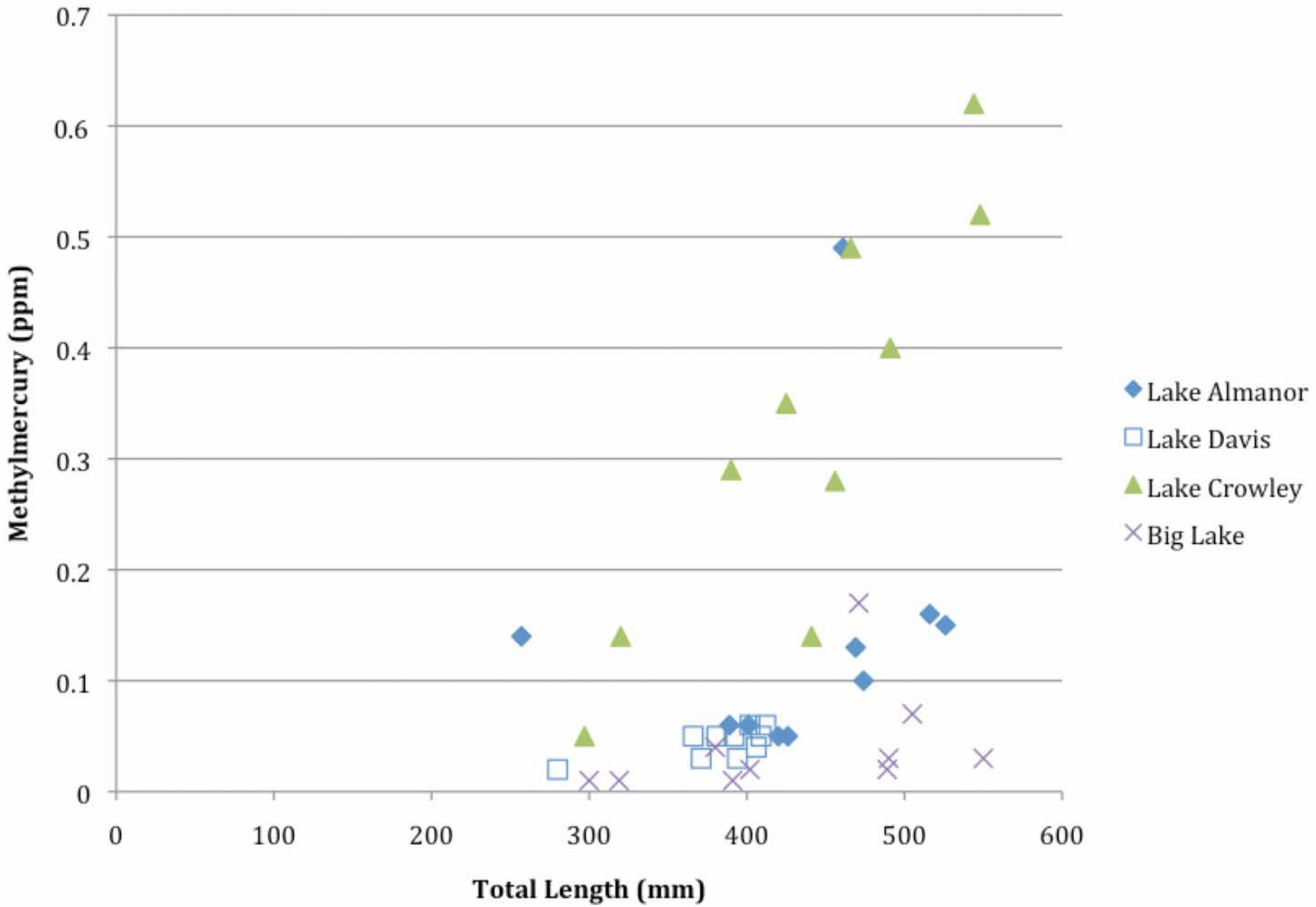
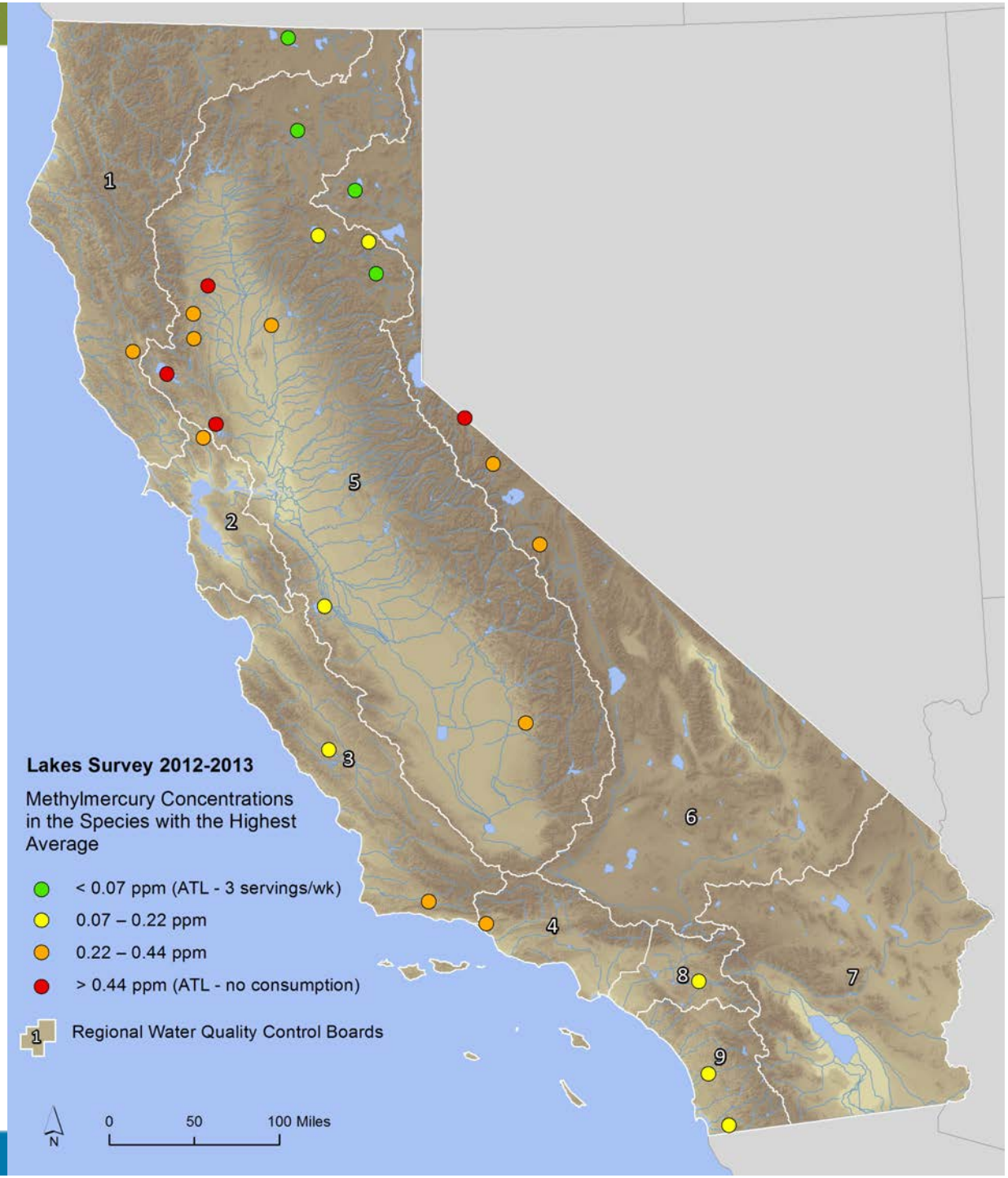
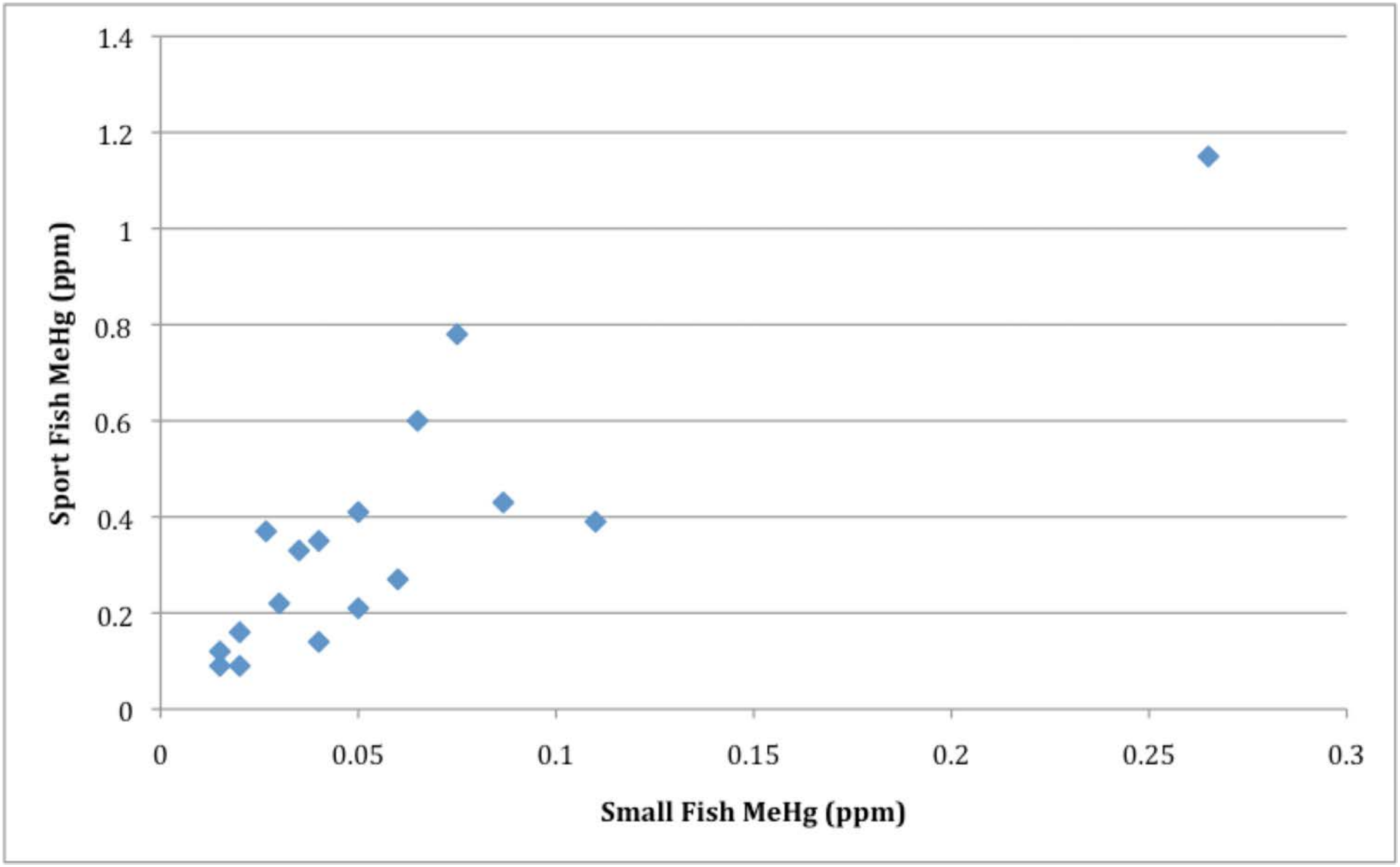
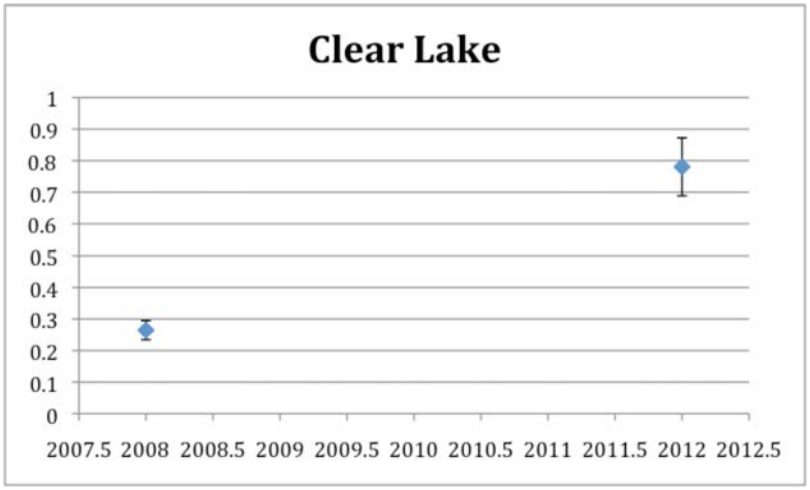

2.5
2
1.5
1
0.5
0
Methylmercury (ug/g ww)
0
100
200
300
400
500
600
Total Length (mm)
Antelope Lake
Black Butte Lake
Clear Lake
East Park Reservoir
Lake Berryessa
Lake Cachuma
Lake Casitas
Lake Hennessey
Lake Hodges
Lake Mendocino
Lake San Antonio
Lower Otay Reservoir
O'Neill Forebay
Perris Reservoir
Stony Gorge Reservoir
Success Lake
Thermalito Afterbay

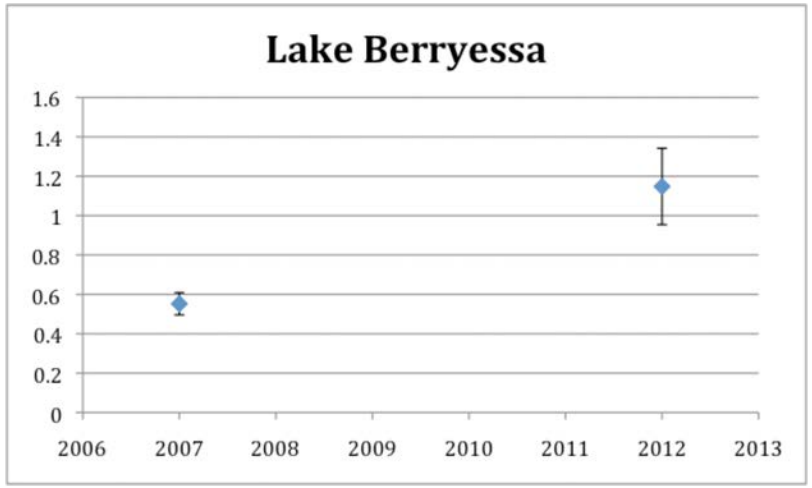

0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Methylmercury (ppm)
0
100
200
300
400
500
600
Total Length (mm)
Lake Almanor
Lake Davis
Lake Crowley
Big Lake

- New wrinkle - Topaz Lake
  - 2 smallmouth bass
  - 400 mm
  - 0.85 ppm
  - Sucker and rainbow trout in 2008, both 0.18 ppm




1.4
1.2
1
0.8
0.6
0.4
0.2
0
Sport Fish MeHg (ppm)
0
0.05
0.1
0.15
0.2
0.25
0.3
Small Fish MeHg (ppm)





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Wildlife Study: Other Points

1. Fact sheet will be drafted and distributed for review
2. Can write a press release – desired?
3. Report format is a question
4. Timing of release is dependent on USGS
5. Fish data will be available through Portal
6. Bird data will be on CEDEN
7. Flat files for bird info on the Portal
8. Suggested addition: An effective feedback loop for users

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Item 4: Bass Lake Monitoring Design

- Presentation and discussion today
- Written comments due April 22 (may be negotiable)
- Desired outcome: Obtain input to guide preparation of the final sampling plan

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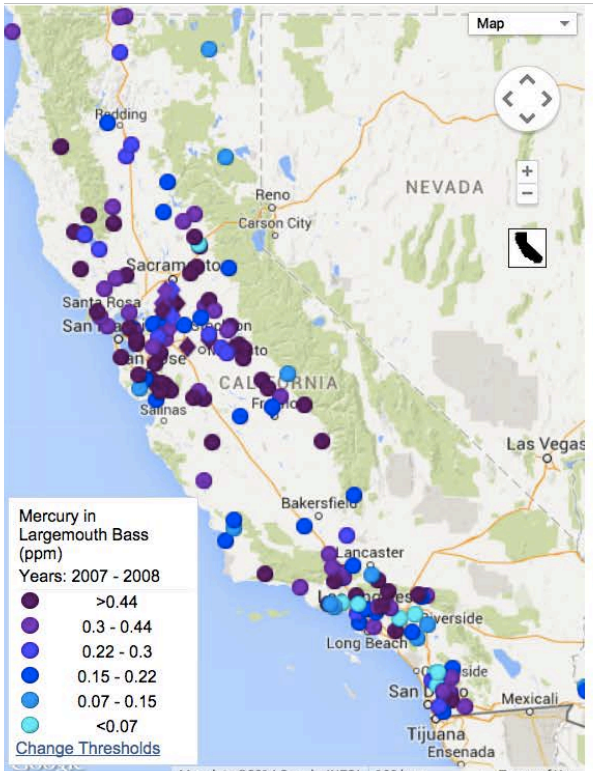
Bass Lake Sampling Plan: Overview

- SWAMP mission: provide resource managers, decision makers, and the public with timely, high-quality information to evaluate the condition of all waters throughout California
- BOG objectives: 1) status; 2) trends; 3) sources and pathways; and 4) effectiveness of management actions



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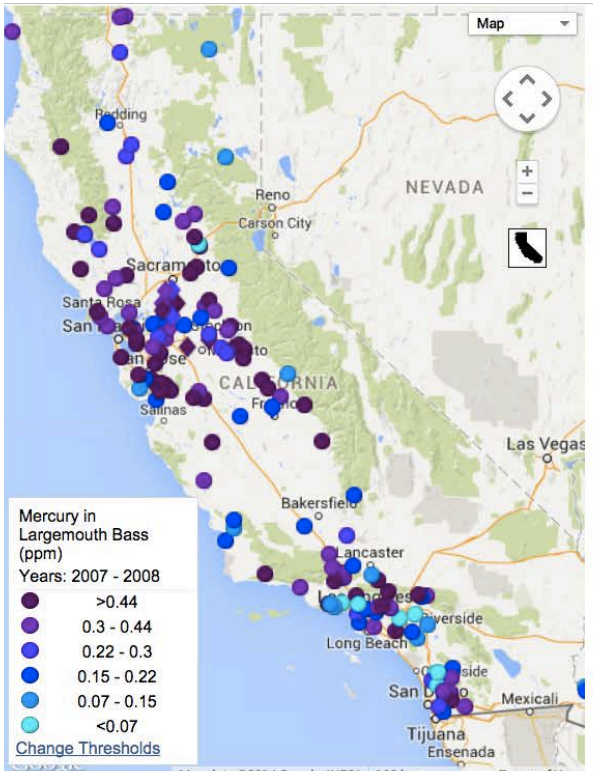
Bass Lake Sampling Plan: Overview

- Need for updated information on status
- Need for information on broad-scale trends
- No one-size-fits-all
- Bass lakes
  - High impairment – big driver of the statewide TMDL
  - Robust indicator of food web mercury



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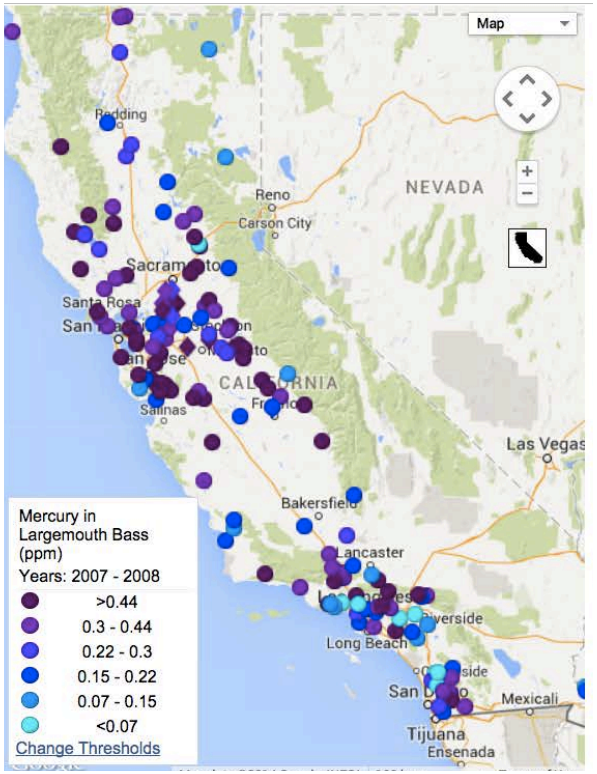
Bass Lake Sampling Plan: Overview

- Revisit high priority bass lakes on a 10 year cycle for status updates
- Pick ~190 lakes of highest interest
- Primary focus on mercury
- Also obtain statewide trend through random sampling of this population



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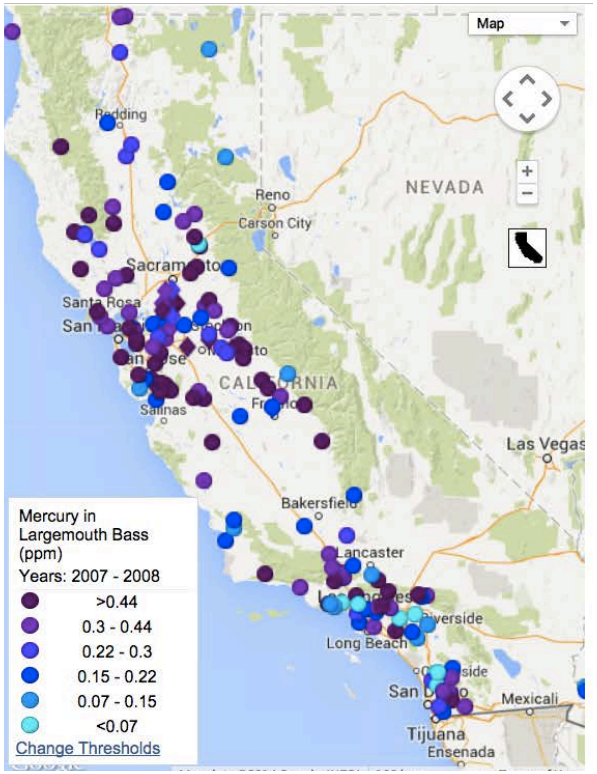
Sampling Scheme

- 5 randomly-drawn subsets of ~38 lakes ("panels")
- "Rotating panel" design
  - Advantages
    - Increased power for trend detection
    - Predictable schedule for each lake
    - Don't lose much statistically
- Panels become fixed – <u>best to choose them carefully now</u>
- Biennial sampling
- Revisit each lake once every 10 years



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Master Revisit Schedule

X = funded by SWAMP, O = funded by another program

General water body category	**Specific category** (numbers are approximate)	**Revisit freq-uency for each water body**	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Lakes	1) Bass Lakes (n=160) (Statewide Core Monitoring)	10 yr	X		X		X		X		O		O		O		O		
	2) Bass Lakes - those not yet sampled	One-time surveys		X		X													
	3) Bass Lakes - where actions are taken	1 yr		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	4) Trout Lakes - <0.2 ppm (n=90)	20 yr												X	X	X			
	5) Trout Lakes - >0.2 ppm (n=5)	10 yr				X									X				
Rivers and Streams	6) Bass sites in Delta (n=10)	1 yr		O	O	O	O	O	O	O	O	O	O		O		O		O
	7) Other bass/sucker sites (n=10)	10 yr							X										X
	8) Trout Sites - <0.2 ppm (n=50)	20 yr																	X
	9) Trout Sites - >0.2 ppm (n=10)	10 yr							X										X
Coast	10) SF Bay	5 yr					O					O					O		
	11) SC Bight (n=27)	10 yr					O										O		
	12) Other coast zones (n=35)	10 yr						X										X	

Sampling Plan: Management Questions

1. What are the recent ~~average~~ concentrations of contaminants of concern in each priority bass lake or reservoir?
   - Timely, high quality information on status – impairment assessment, consumption advice
   - Not just mercury
   - Data needed: ~~average~~ concentrations of contaminants of concern in the species with a tendency to accumulate high concentrations

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Sampling Plan: Management Questions

2. What is the trend in statewide average bass mercury concentrations in fish in priority bass lakes and reservoirs?
   - Needed to interpret responses to management actions
   - Statewide increase is plausible
   - Measurements of statewide average concentrations that are repeated over time

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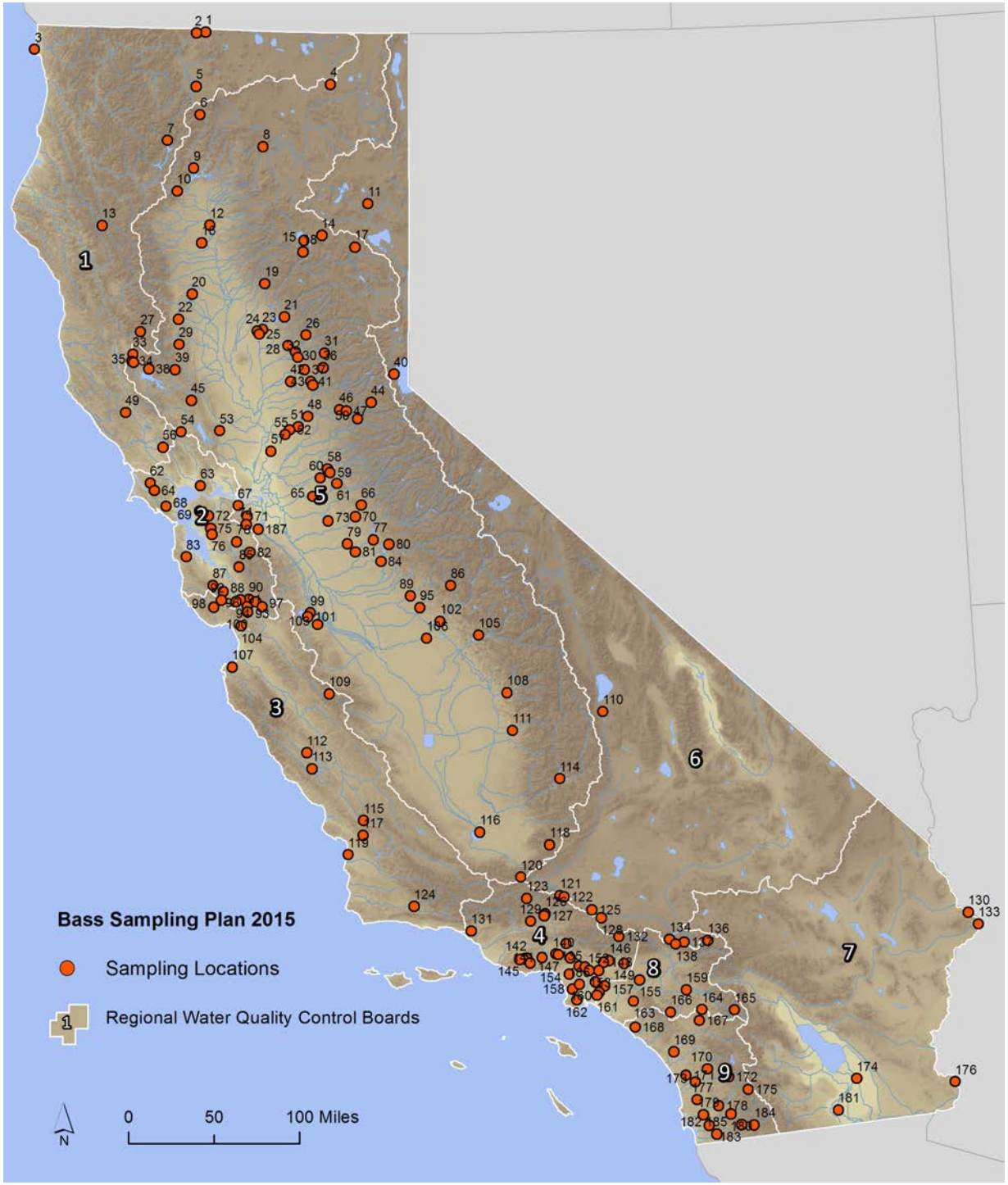
Lake Selection

- SWAMP 2007-8 survey
- Other lakes with data in CEDEN
- Review by regions
- Some lakes added
- Draft list - further discussion needed



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Lake List and Properties 04-07-15.xlsx

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1								COUNT	187													
2																						
3	Included in 2/2/15 BOG Bass Only list	Included on 2/2/15 BOG extended list	Not included on either bass only or extended lists	Bass Sampled [Combination of columns M & AB]	Bass Type Sampled [Combination of columns M & AB]	Regional Board	Station Name for Statewide Mercury Program Database	On 2010 303(d) List as Mercury Impaired (a)	Regional Board Prioritization for Long-Term Monitoring [X=INCLUDE]	Rationale/Comments	Panel Number	Station Number (Lakes Report)	Station Name (BOG 2/2/15 List)	Bass Sampled [per 2/2/15 BOG List]	Small	Medium	Large	Extra-large	Random	Targeted	Moderate PCBs (>20)	High PCBs (>100)
5	X			X	LMB	1	Copco Lake	X'	X			3	Copco Lake	X	X					X		
6	X			X	LMB	1	Dead Lake	X'	X			5	Dead Lake	X	X					X		
9	X			X	LMB	1	Iron Gate Reservoir	X'	X			4	Iron Gate Reservoir	X	X					X		
12	X			X	LMB	1	Mendocino, Lake	X	X	(US Bureau of Reclamation does some bas		69	Lake Mendocino	X		X				X		
13	X			X	LMB	1	Pillsbury, Lake	X	X			56	Lake Pillsbury	X		X				X		
15	X			X	LMB	1	Reservoir F		X			8	Reservoir F	X	X				X			
16	X			X	LMB	1	Ruth Lake	X'	X			32	Ruth Lake	X	X					X		
17	X			X	LMB	1	Shastina, Lake	X	X			9	Lake Shastina	X	X					X		
18	X			X	LMB	1	Sonoma, Lake	X	X	(US Bureau of Reclamation does some bas		90	Lake Sonoma	X		X				X		
19	X			X	LMB	1	Spring Lake		X	Gary will be sampling S	1	101	Spring Lake	X	X					X		
20		X		X	LMB	1	Trinity Lake	X	X			22	Trinity Lake					X		X		
21	X			X	LMB	2	Vasona Reservoir		X	PCBs		167	Lake Vasona	X	X					X	X	X
22	X			X	LMB	2	Lafayette Reservoir	X	X			132	Lafayette Reservoir	X	X					X		
23	X			X	LMB	2	Shadow Cliffs Reservoir	X	X			143	Shadow Cliffs Reservoir	X	X					X	X	
24	X			X	LMB	2	Nicasio Lake	X	X			116	Nicasio Lake	X	X					X		
25	X			X	LMB	2	Chabot, Lake (Vallejo)		X			115	Lake Chabot (Vallejo)	X	X					X	X	
26	X			X	LMB	2	Henne, Lake		X			98	Lake Henne	X	X				X			
27	X			X	LMB	2	Lexington Reservoir		X	important reference site for Guad Hg			Lexington Reservoir	X								
28	X			X	LMB	2	Ogier Quarry Ponds		X			172	Oiger Quarry Ponds	X	X				X			
29	X			X	LMB	2	San Pablo Reservoir	X	X			129	San Pablo Reservoir	X	X					X		
30	X			X	LMB	2	Del Valle Reservoir	X	X			152	Lake del Valle	X	X					X		
31	X			X	LMB	2	Stevens Creek Reservoir	X	X			165	Stevens Creek Reservoir	X	X					X	X	
32	X			X	LMB	2	Coyote Lake		X			178	Coyote Lake	X	X					X		
33	X			X	LMB	2	Lower Crystal Springs Reservoir		X			157	Lower Crystal Springs Reserv	X	X				X			
34	X			X	LMB	2	Soulejoule Lake	X^	X			114	Soulejoule Lake	X	X					X		
35	X			X	LMB	2	Anderson Lake	X	X			174	Anderson Lake	X	X					X		
36	X			X	LMB	2	Upper San Leandro Reservoir		X			138	Upper San Leandro Reservoir	X	X				X			
37	X			X	LMB	2	Calero Reservoir	X^	X			173	Calero Reservoir	X	X					X		
38	X			X	LMB	2	Almaden Reservoir	X^	X			168	Almaden Lake	X	X					X	X	
50	X			X	LMB	2	Bon Tempe Lake	X	X	before sampling I would inquire of Marin Mu		124	Bon Tempe Lake	X	X					X		
52	X			X	LMB	2	Chabot, Lake (San Leandro)	X	X	PCBs		140	Lake Chabot (San Leandro)	X	X				X		X	X
53	X			X	LMB	2	Calaveras Reservoir	X	X	before sampling I would inquire of SFPUC \		159	Calaveras Reservoir	X		X			X			
59	X			X	LMB	3	Cachuma, Lake		X			208	Lake Cachuma	X			X			X		
60	X			X	LMB	3	Chesbro Reservoir	X	X			176	Chesbro Reservoir	X	X					X	X	
62	X			X	LMB	3	Hernandez Reservoir		X			192	Hernandez Reservoir	X	X					X		
66	X			X	LMB	3	Loch Lomond Reservoir		X			177	Loch Lomond Reservoir	X	X					X		
67	X			X	LMB	3	Lopez Lake		X			199	Lopez Lake	X	X					X		
69	X			X	LMB & SMB	3	Nacimiento, Lake	X	X			195	Lake Nacimiento	SMB			X			X		
71			X			3	Oso Flaco Lake		X													
72	X			X	LMB	3	Pinto Lake		X			186	Pinto Lake	X	X					X		
73			X			3	Roberts Lake (Laguna Del Rey)		X													

Combined | Copy for Draft Sampling Plan | Notes | Summaries for where bass sampld | Regional Tallies

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Lake List and Properties 04-07-15.xlsx

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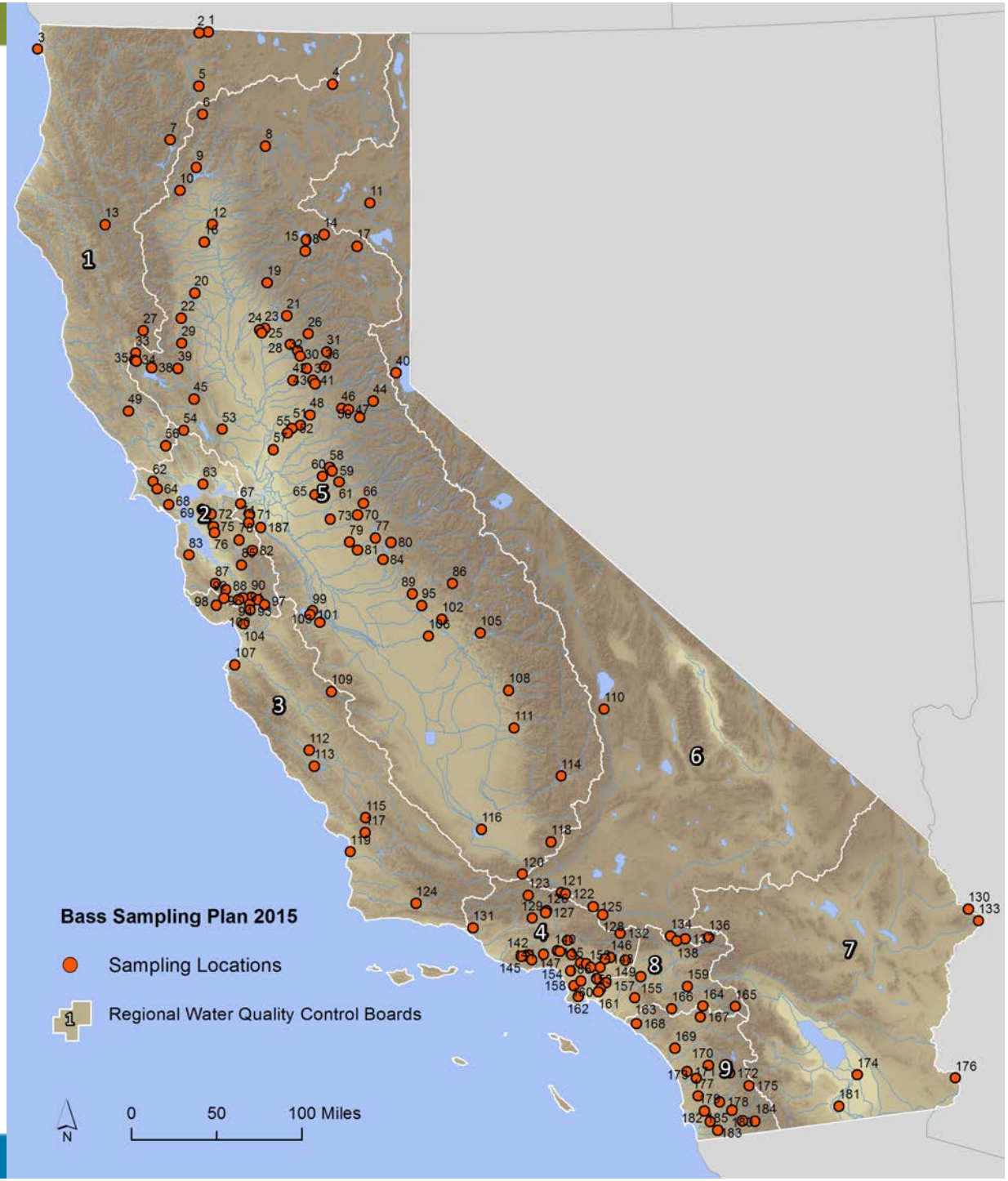
	A	B	C	D	E	F	G	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT
1																			
2																			
3	Included in 2/2/15 BOG Bass Only list	Included on 2/2/15 BOG extended list	Not included on either bass only or extended lists	Bass Sampled [Combination of columns M & AB]	Bass Type Sampled [Combination of columns M & AB]	Regional Board	Station Name for Statewide Mercury Program Database	Stream	Year_Built	Capacity (Ac-ft))	Res Area (Acres)	Drainage Area (mi^2)	Crest Elev (ft)	Free-board (ft)	Height (ft)	Length (ft)	Width (ft)	Type	Volume (yd^3)
105	X			X	LMB	4	Lincoln Park Lake												
106		X		X	LMB	4	Lindero, Lake	Lindero Creek	1966	90	12	5	935	7	19	170	24	ERTH	1550
107							Magic Johnson Lakes												
108	X			X	LMB	4	Malibou Lake	Malibu Creek	1923	500	55	64	727	5	44	190	3	CORA	900
110	X			X	LMB	4	Peck Road Water Conservation Pa												
111	X			X	LMB	4	Piru, Lake	Piru Creek	1955	100000	1240	422.5	1078.3	23.3	213	1275	30	ERTH	3700000
112	X			X	LMB	4	Puddingstone Reservoir	Walnut Creek	1928	16342	490	33.1	982	12	147	2698	25	ERTH	605000
113	X			X	LMB	4	Pyramid Lake	Piru Creek	1973	180000	1360	293	2606	58	386	1080	30	ERRK	6952000
114	X			X	LMB	4	Santa Fe Reservoir	San Gabriel River	1949	32109	1079	236	513	17	92	24100	30	ERTH	12000000
115		X				4	Sepulveda Lake	Los Angeles River	1941	17425	1340	152	725	25	57	15443	30	ERTH	2540000
116	X			X	LMB	4	Sherwood, Lake	Potrero Valley Cr	1904	2600	163	16.1	954	1	45	350	4	CORA	0
118	X			X	LMB	4	Toluca Lake												
119	X			X	LMB	4	Westlake Lake	Triunfo Canyon Cr	1967	791	95	28.9	880	10	40	730	4	GRAV	14300
120		X				4	Wilderness Park Lake												
121	X			X	LMB	5	531TU0073-BOG Other Lake 0073	Tr Calaveras Rv	1955	1400	151	7.8	144	5	26	1653	18	ERTH	98919
122	X			X	LMB	5	545TU0164-BOG Other Lake 164												
123	X			X	SMB	5	Almanor, Lake	Nfk Feather Rv	1927	1308000	28257	503	4515	16	130	1250	75	HYDF	1532800
125	X			X	LMB	5	Amador, Lake	Jackson Creek	1965	22000	385	58	481	13	193	1140	11	ERRK	1223000
126	X			X	LMB	5	Antelope Lake	Indian Creek	1964	22566	931	71	5025	23	113	1320	30	ERTH	380000
127	X			X	LMB	5	Bass Lake	Nfk Willow Creek	1910	45410	1165	51.4	3380.86	14.8	145	1880	40	HYDF	907000
129			X	X	LMB	5	Beach Lake												
131	X			X	LMB	5	Berryessa, Lake	Putah Creek	1957	1602000	20700	576	456	16	255	1023	12	VARA	326000
132	X			X	LMB	5	Bethany Reservoir												
135	X			X	LMB & SMB	5	Black Butte Lake	Stony Creek	1963	143700	4560	741	515	41	156	2970	0	ERTH	2620000
136	X			X	LMB	5	Blue Lakes												
138	X			X	LMB	5	Brite Valley Lake	Tr Chanac Creek	1973	1820	76	1.3	4370	7.5	56	3900	20	ERTH	900000
139	X			X	SMB	5	Britton, Lake	Pit River	1925	34600	1265	4700	2750.5	18	120	494	10	GRAV	81352
141	X			X	SMB	5	Butt Valley Reservoir	Butt Creek	1924	49800	1600	86.2	4158	16	106	1483	27	HYDF	710000
143	X			X	LMB	5	California, Lake												
144	X			X	LMB	5	Camanche Reservoir	Mokelumne River	1963	417120	7700	619	263	27.5	171	2400	34	ERTH	11000000
145	X			X	SPB	5	Camp Far West Reservoir	Bear River	1963	104500	2050	286.2	320	20	185	2100	40	ERRK	1953000
147	X			X	LMB	5	Castac Lake												
151	X			X	LMB	5	Clear Lake	Cache Creek	1914	315000	43800	514	1328.6	13	30	260	4	GRAV	0
152	X			X	LMB	5	Collins Lake	Dry Creek	1963	57000	975	72.3	1197	14	152	2700	25	ERTH	1330000
153	X			X	LMB	5	Combie, Lake	Bear River	1928	5555	360	135.6	1610	10	85	762	7	VARA	21443
154	X			X	LMB	5	Contra Loma Reservoir	Off-Stream	1967	2627	95	1.07	217	6	82	1050	30	ERTH	641000
157			X	X	LMB	5	Davis Creek Reservoir	Davis Creek	1985	6079	190	10.2	1443.5	16.5	105	953	30	ERTH	851000
160	X			X	LMB	5	Don Pedro Reservoir	Tuolumne River	1971	2030000	12960	1542	855	55	568	1900	40	ERRK	17000000
162	X			X	LMB	5	East Park Reservoir	Little Stony Creek	1910	51000	1820	102	1199	0.5	92	266	10	VARA	16000
163	X			X	LMB	5	Eastman Lake	Chowchilla River	1975	150000	1780	235	613.5	26.5	192	1746	20	ERRK	2265000
164		X		X	LMB & SPB	5	Englebright Lake	Yuba River	1941	70000	815	1100	542	15	280	1142	21	VARA	365000

Combined | Copy for Draft Sampling Plan | Notes | Summaries for where bass sampld | Regional Tallies

Normal View | Filter Mode | Sum=21 | SCRL | CAPS | NUM

Lake Selection

- SWAMP 2007-8 survey
- Other lakes with data in CEDEN
- Review by regions
- Some lakes added
- Draft list - further discussion needed



Sampling Schedule

- 190 lakes is the population of interest
- Random sampling yields a representative average
- Rotating panel
- Power analysis

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Sampling Schedule

- 190 lakes is the population of interest
- Random sampling yields a representative average
- Rotating panel
- Power analysis
- GRTS approach to selecting lakes for the panels
- Question: temporarily inaccessible lakes – just hit them next time?

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Analytes and Costs

$8,000 per lake for sampling				
# Water Bodies		29		
	Cost per samp	Number	Rounded Num	Cost
Sampling	8000	29	29	232000
Composite prep (2 comps, 20% of samples)	116	11.6	11	1276
Archive (3 per composite)	7	34.8	34	238
PCBs (2 comps, 20% of samples)	630	11.6	11	6930
OCPs (2 comps, 5% of samples)	630	2.9	2	1260
Mercury (DMA)	79	348	348	27492
Aging	85	29	29	2465
Validation				
Cruise report				819
Total	at 14/15 funding level: $280K			272480

$8,000 per lake for sampling				
# Water Bodies		38		
	Cost per samp	Number	Rounded Num	Cost
Sampling	8000	38	38	304000
Composite prep (2 comps, 20% of samples)	116	15.2	15	1740
Archive (3 per composite)	7	45.6	45	315
PCBs (2 comps, 20% of samples)	630	15.2	15	9450
OCPs (2 comps, 5% of samples)	630	3.8	3	1890
Mercury (DMA)	79	456	456	36024
Aging	85	38	38	3230
Validation				
Cruise report				819
Total	at 15/16 & 16/17 funding level: $360K			357468

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Target Species: Mercury

	Foraging Type		Trophic Level	Distribution			
Species	Water column	Bottom feeder		Low Eleva-tion	Foothills	High Elevation	Priority for Collection
Largemouth bass	X		4	**X**	**X**		**A**
Smallmouth bass	X		4	x	**X**		**A**
Spotted bass	X		4	x	**X**		**A**
Sacramento pikeminnow	X		4	x	x		B

Trophic levels are the hierarchical strata of a food web characterized by organisms that are the same number of steps removed
from the primary producers. The USEPA's 1997 Mercury Study Report to Congress used the following criteria to designate
trophic levels based on an organism's feeding habits:

Trophic level 1: Phytoplankton.
Trophic level 2: Zooplankton and benthic invertebrates.
Trophic level 3: Organisms that consume zooplankton, benthic invertebrates, and TL2 organisms.
Trophic level 4: Organisms that consume trophic level 3 organisms.

X widely abundant x less widely abundant "A" primary target for collection "B" secondary target for collection

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Target Species: Organics

	Foraging Type		Trophic Level	Distribution			
Species	Water column	Bottom feeder		Low Eleva-tion	Foothills	High Elevation	Priority for Collection
Largemouth bass	X		4	**X**	**X**		B
Smallmouth bass	X		4	x	**X**		B
Spotted bass	X		4	x	**X**		B
Sacramento pikeminnow	X		4	x	x		B
White catfish		X	4	x	x		**A**
Brown bullhead		X	3	x			**A**
Channel catfish		X	4	**X**	**X**		**A**
Carp		X	3	**X**	**X**		**A**
Sacramento sucker		X	3	x	x		**A**
Tilapia		X	3				B
Bluegill	X		3	**X**	**X**		B
Green sunfish	X		3	**X**	**X**		B
Crappie	X		3/4	x	x		B
Redear sunfish	X		3	**X**	**X**		B

Trophic levels are the hierarchical strata of a food web characterized by organisms that are the same number of steps removed from the primary producers. The USEPA's 1997 Mercury Study Report to Congress used the following criteria to designate trophic levels based on an organism's feeding habits:

Trophic level 1: Phytoplankton.
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Trophic level 4: Organisms that consume trophic level 3 organisms.

X widely abundant x less widely abundant "A" primary target for collection "B" secondary target for collection

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Size Ranges and Processing

	Process for Mercury	Process for Organics and Selenium	Numbers and Size Ranges (mm)
Primary Targets: stay on location until one of these targets from both Group 1 and 2 is obtained, or collect secondary targets if primary targets are not available			
Group 1) Predator			
Black bass	I		2X(200-249), 2X(250-304), 6X(305-407), 2X(>407)
Sacramento pikeminnow	I		3X(200-300), 6X(300-400), 3X(400-500)
Group 2) Bottom feeder			
White catfish	C	C	5X(229-305)
Channel catfish	C	C	5X(375-500)
Common carp	C	C	5X(450-600)
Brown bullhead	C		5X(262-350)
Sacramento sucker	C	C	5X(375-500)
Secondary Targets: collect these if primary targets are not available			
Bluegill	C	C	5X(127-170)
Redear sunfish	C	C	5X(165-220)
Black crappie	C	C	5X(187-250)
Tilapia	C	C	5X(235-314)
Green sunfish	C	C	Xx

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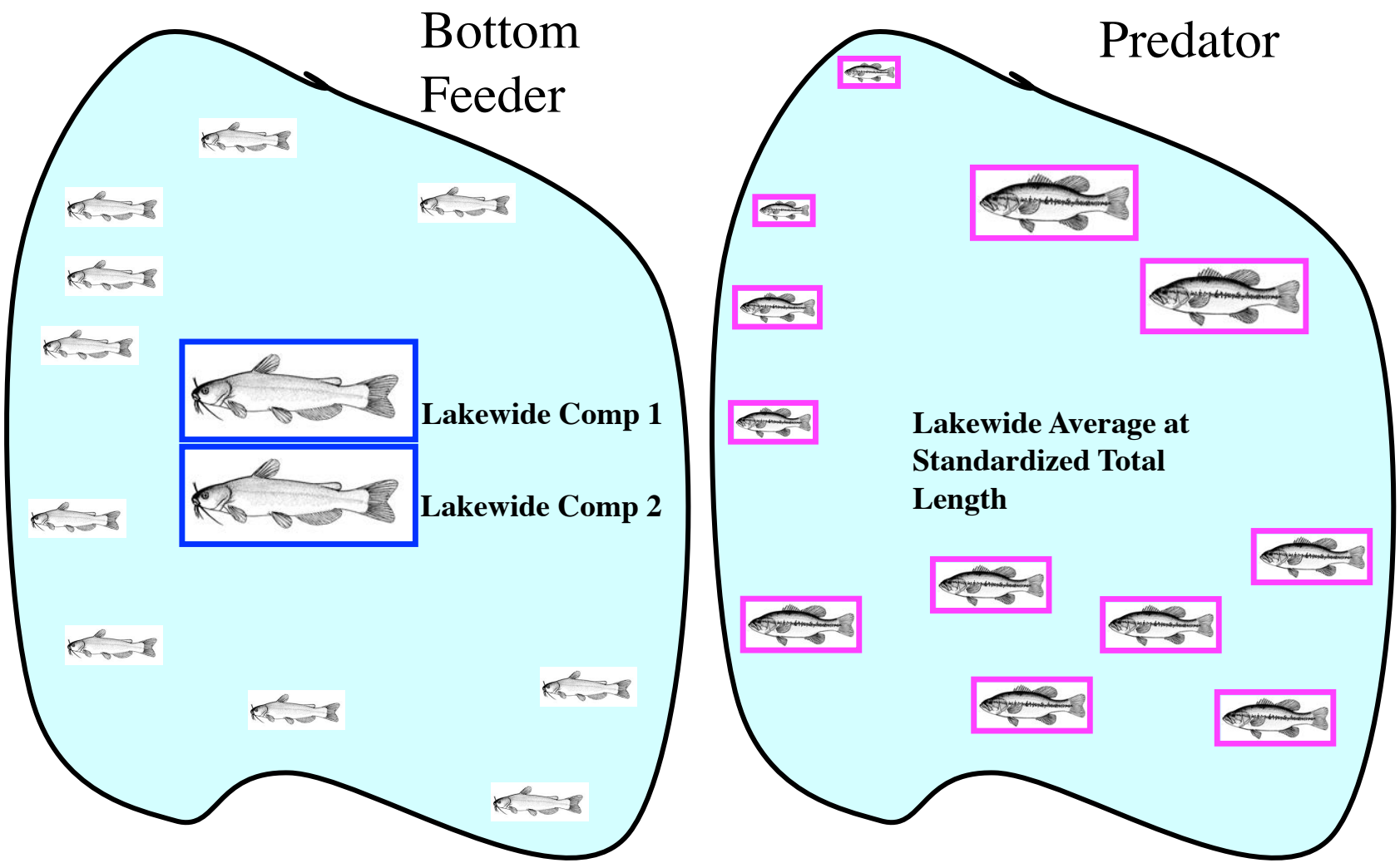
Small Lake
(0 – 500 ha)

Analyze Orgs

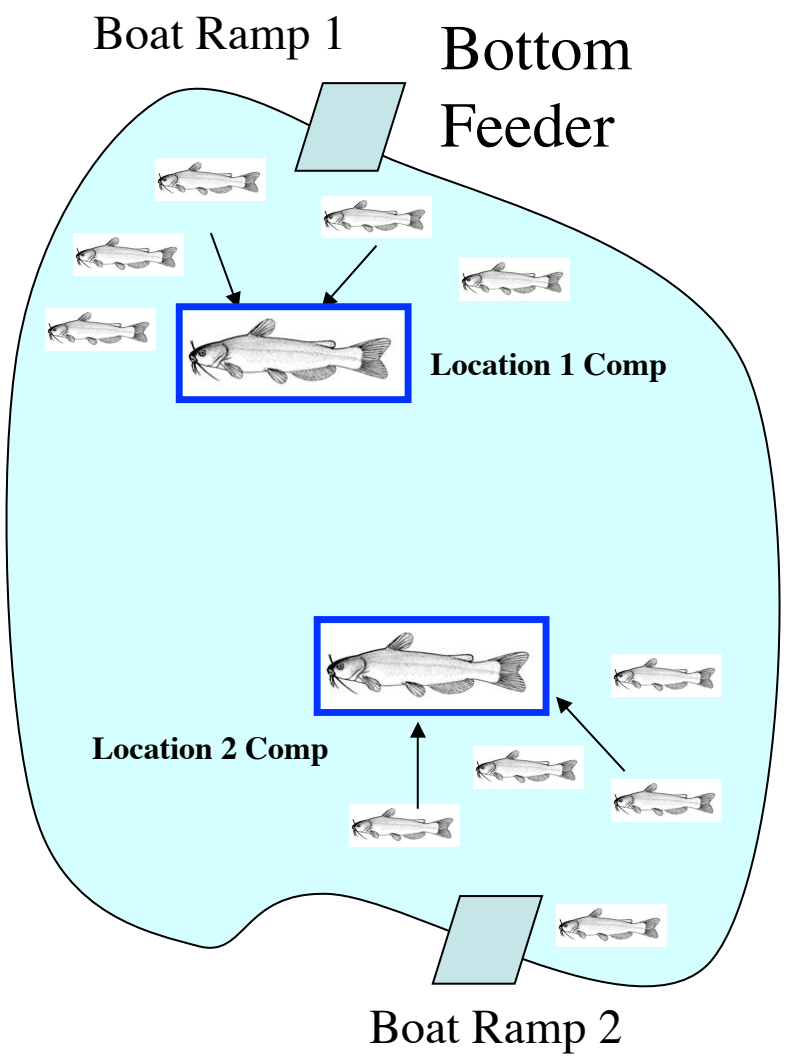
Analyze Hg

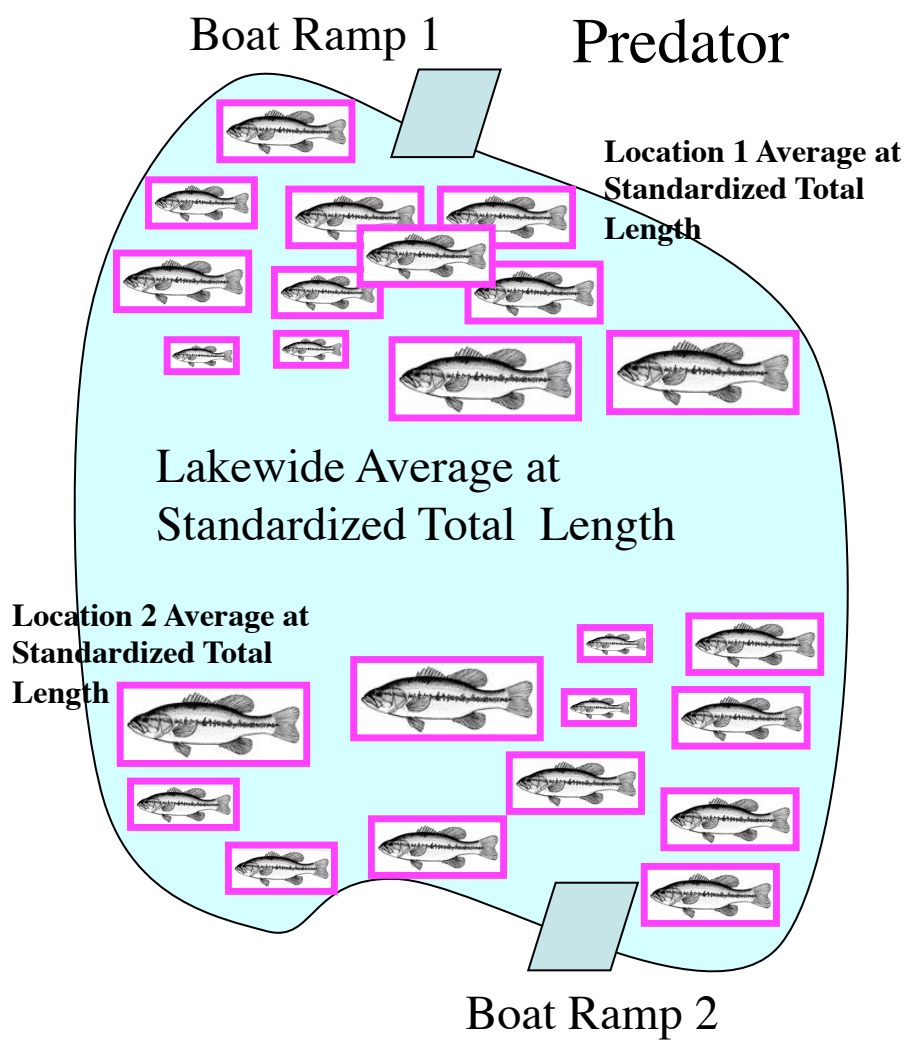


Medium Lake (500 – 1000 ha)

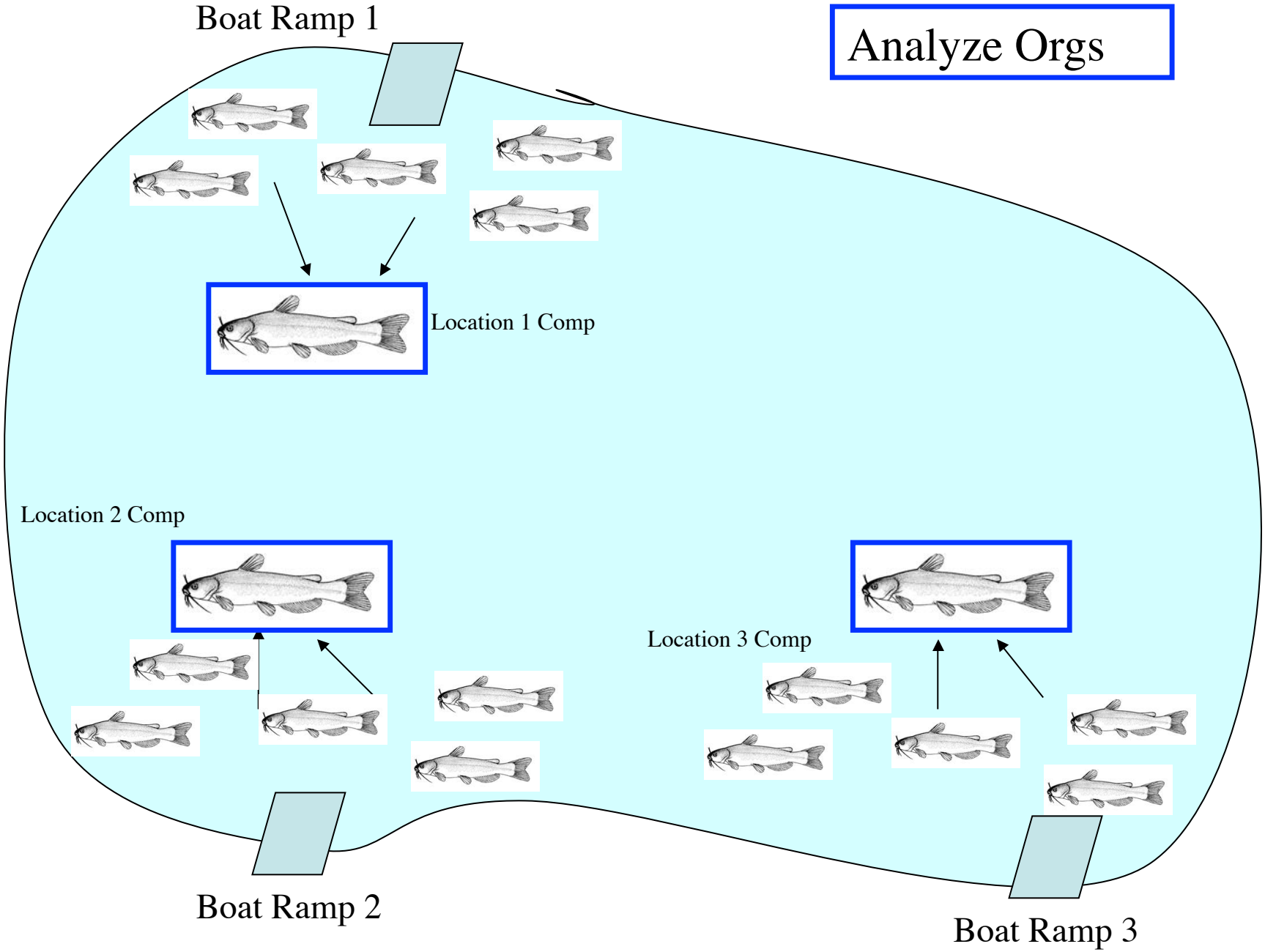
Analyze Orgs

Analyze Hg

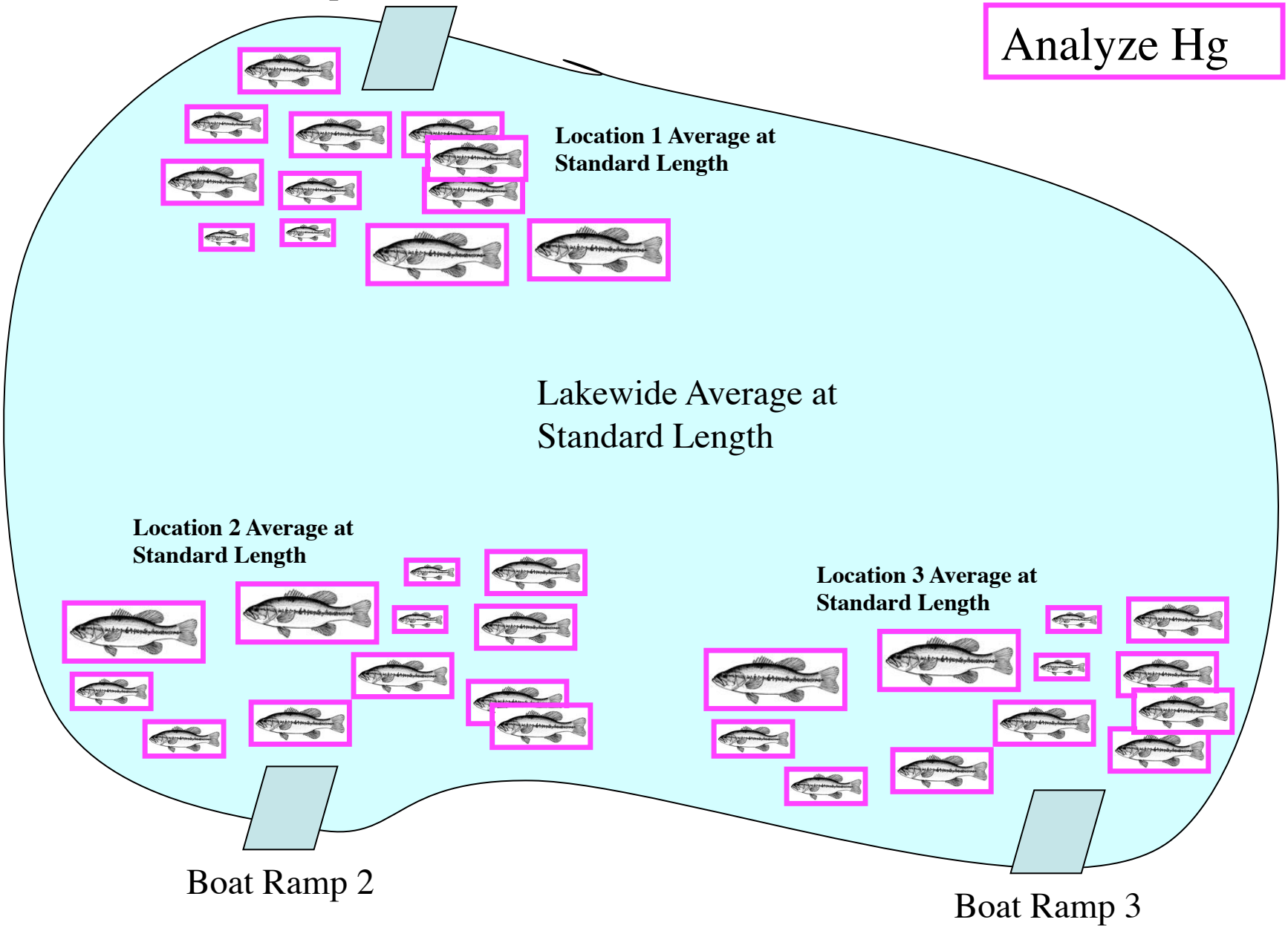




Large Lake: *Bottom Feeder*



Large Lake: *Predator*



Coordination

- Region 4 – 25 lakes, beginning in May
- Region 5 – 4 lakes (no overlap)
- USGS? – will ask again

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Other Parameters

- Small fish?
- Sediment?
- Water?

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Timeline: Sampling Plan

- Review Panel meeting – April 15
- Finalize Sampling Plan and QAPP – early May
- Begin Region 4 sampling – ~~May~~ June
- Begin bass lake sampling – June?

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Timeline: Products

- Draft data report – March 2017
- Final data report and fact sheet – May 2017
- Data posted to Portal – May 2017
- Interpretive report on first two rounds – May 2019

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Sampling Plan: Discussion/Review Points

1. Is this long-term monitoring effort a wise use of limited monitoring resources?
2. Is the sampling plan technically sound?
3. How important is it to include other parameters: prey fish, sediment, water?

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Item 5: Long-term Sport Fish Monitoring Plan

- Discussion: Long-term Sport Fish Monitoring Plan - Other Water Bodies
- Desired outcome: Obtain preliminary input on plans for 2016 and the long-term

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Master Revisit Schedule

X = funded by SWAMP, O = funded by another program

General water body category	**Specific category** (numbers are approximate)	**Revisit freq-uency for each water body**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**
Lakes	1) Bass Lakes (n=160) (Statewide Core Monitoring)	10 yr	X		X		X		X		O		O		O		O		
	2) Bass Lakes - those not yet sampled	One-time surveys		X		X													
	3) Bass Lakes - where actions are taken	1 yr		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	4) Trout Lakes - <0.2 ppm (n=90)	20 yr												X	X	X			
	5) Trout Lakes - >0.2 ppm (n=5)	10 yr				X									X				
Rivers and Streams	6) Bass sites in Delta (n=10)	1 yr		O	O	O	O	O	O	O	O	O	O		O		O		O
	7) Other bass/sucker sites (n=10)	10 yr							X										X
	8) Trout Sites - <0.2 ppm (n=50)	20 yr																	X
	9) Trout Sites - >0.2 ppm (n=10)	10 yr							X										X
Coast	10) SF Bay	5 yr					O					O					O		
	11) SC Bight (n=27)	10 yr					O										O		
	12) Other coast zones (n=35)	10 yr						X										X	

Master Revisit Schedule

X = funded by SWAMP, O = funded by another program

General water body category	**Specific category** (numbers are approximate)	**Revisit freq-uency for each water body**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Lakes	1) Bass Lakes (n=160) (Statewide Core Monitoring)	10 yr	X		X		X	
	2) Bass Lakes - those not yet sampled	One-time surveys		X		X		
	3) Bass Lakes - where actions are taken	1 yr		O	O	O	O	O
	4) Trout Lakes - <0.2 ppm (n=90)	20 yr						
	5) Trout Lakes - >0.2 ppm (n=5)	10 yr				X		
Rivers and Streams	6) Bass sites in Delta (n=10)	1 yr		O	O	O	O	O
	7) Other bass/sucker sites (n=10)	10 yr						
	8) Trout Sites - <0.2 ppm (n=50)	20 yr						
	9) Trout Sites - >0.2 ppm (n=10)	10 yr						
Coast	10) SF Bay	5 yr					O	
	11) SC Bight (n=27)	10 yr					O	
	12) Other coast zones (n=35)	10 yr						X

Discussion

- Frequencies for different water body types
- Sampling new lakes in 2016?
- Other ideas for 2016?

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Item 6: Information - Timeline for 2015

- **July meeting** – Review Panel – teleconference – Clean Lakes Report
- Other items to discuss this year
  - Filling in the rest of the long-term sampling plan, especially 2016 (due December?)
  - Business Plan (due December)

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