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# Call to Order

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Regular Meeting of the Board of Directors  
Tuesday, September 6, 2022

# Pledge of Allegiance

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# Roll Call

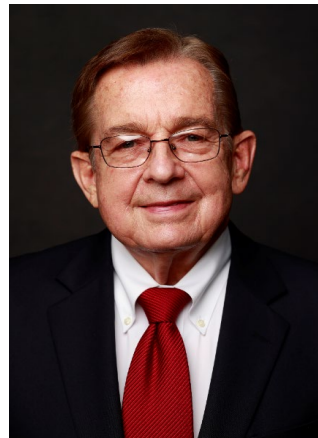
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**Paul Kielhold**  
President



**June Hayes**  
Vice President



**T. Milford  
Harrison**  
Treasurer



**Gil J. Botello**  
Director



**Susan Longville**  
Director

# Public Comment

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Members of the public may address the Board regarding any item within the subject matter jurisdiction of the Board; however, no action may be taken on off-agenda items except as authorized by law. Each speaker is limited to a maximum of three (3) minutes.



# Approval of Minutes (Pg.3 )

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## 2.1 Regular Board Meeting – August 16, 2022

# Board Motion & Roll Call Vote

## Staff Recommendation

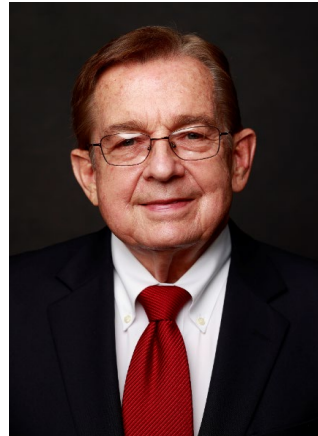
Approve the minutes of the August 16, 2022, Regular Meeting of the Board of Directors as presented



**Paul Kielhold**  
President



**June Hayes**  
Vice President



**T. Milford  
Harrison**  
Treasurer



**Gil J. Botello**  
Director



**Susan Longville**  
Director



# Presentation Item 3.1

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Update on the Studies conducted under the Western Ecological Research Center for Fiscal Year 2022-2023 (WERC) FY 21-22 USGS Agreement





*San Bernardino Valley Municipal Water District  
USGS workplan 2022*



- 1) Updated Population Survey for the Western Pond Turtle in the SAR HCP Plan Area
- 2) Mountain Yellow-legged Frog Surveys and outcomes in the Santa Ana River Watershed
- 3) Mountain Yellow-legged Frog eDNA Monitoring Technique Study

Robert N. Fisher, Adam R. Backlin, Elizabeth A. Gallegos, and Kathy Baumberger



*Updated Population Survey for the Southwestern Pond Turtle within the SAR HCP Plan Area*



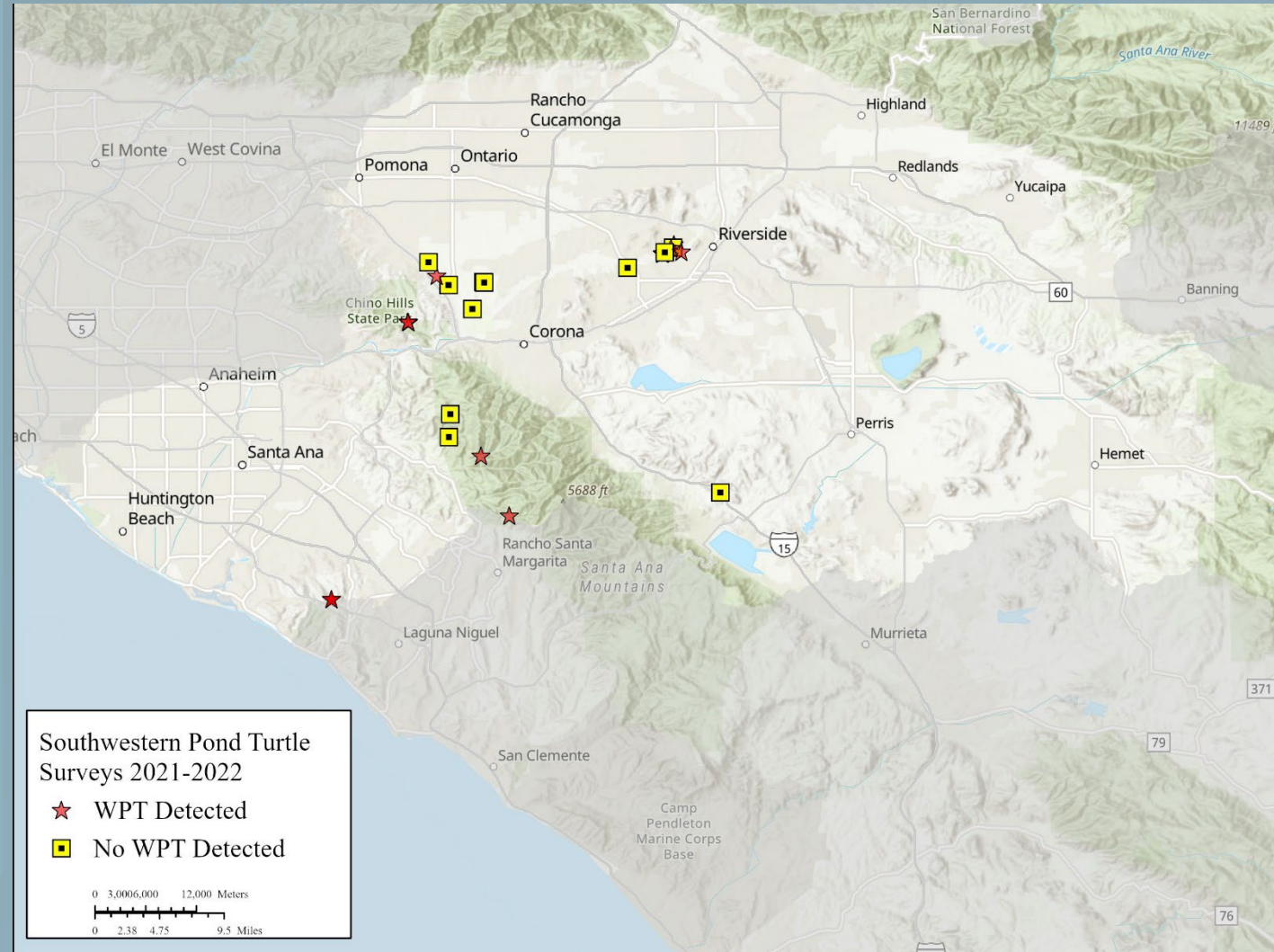
## *Methods*

### Southwestern Pond Turtles

- Habitat suitability was evaluated
- Sites were trapped (4 days/site)
- Some sites were seined



# Updated Population Survey for the Southwestern Pond Turtle within the SAR HCP Plan Area



# *Results*

## Southwestern Pond Turtles

- Detected Pond Turtles at complex of sites in upper Santa Ana River
- One turtle in the west part of Prado Basin
- Many sites had non-native turtles
  - Red-eared sliders, spiny soft-shelled, and false map turtles

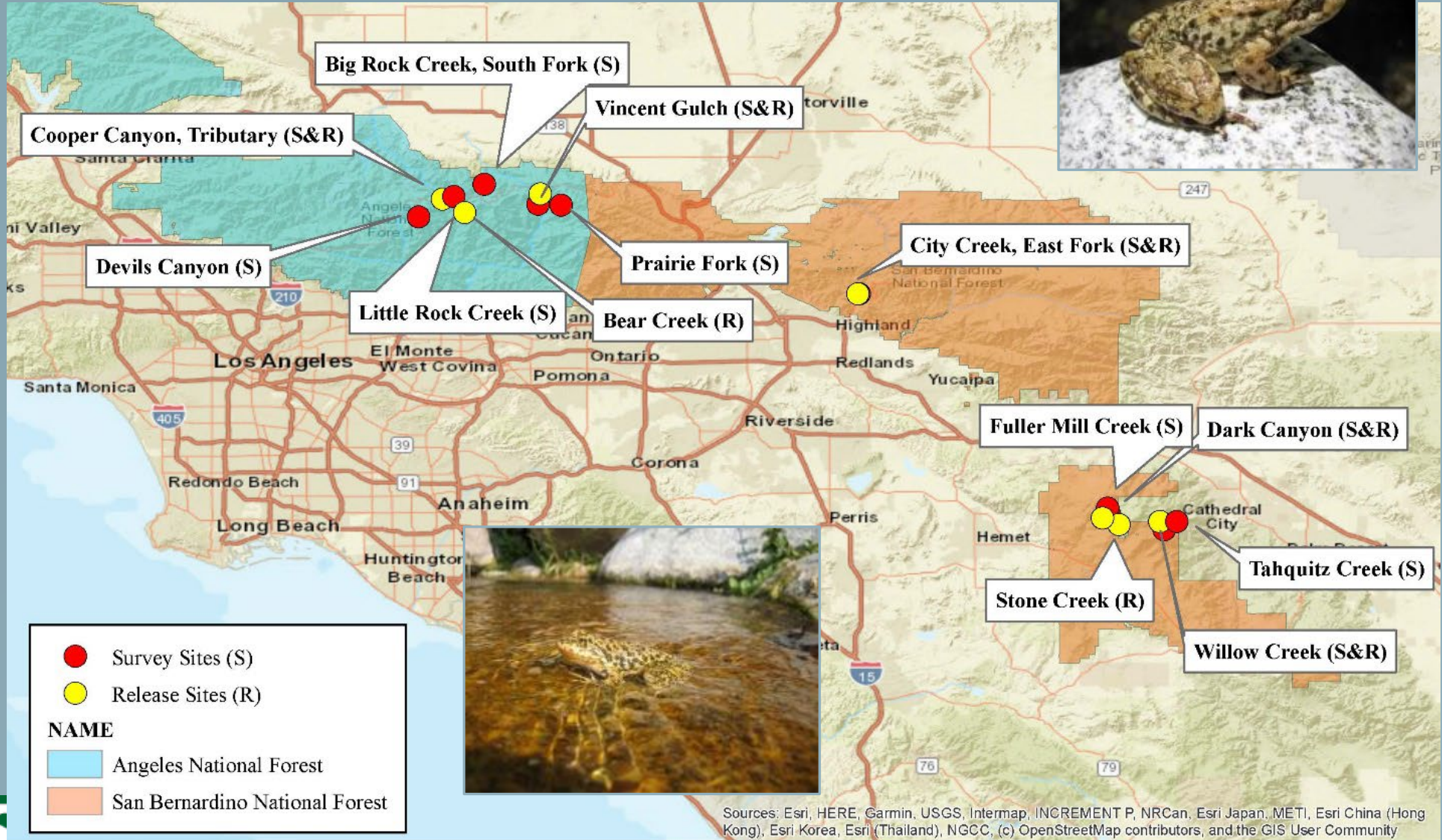


# *Southern Mountain Yellow-legged Frog*

- Occupies the southern Sierra Nevada & the southern CA Mts
- Has declined from over 99% of its historic range
- Listed as Endangered by USFWS in 2002 and by the State in 2012
- 9 remaining populations in southern California (< 200 ind.)
- San Gabriel Mts (5 populations)
- San Bernardino Mts (1 population)
- San Jacinto Mts (3 populations)



# Southern Mountain Yellow-legged Frog



# *Southern Mountain Yellow-legged Frog*

## *Longevity*

<b>Mountain range</b>	<b>Site</b>	<b>Elevation range occupied by <i>R. muscosa</i></b>	<b># uniquely PIT-tagged individuals between 2001-2022</b>	<b>Average # captures for a given individual</b>	<b>Maximum # times an individual was captured</b>	<b>Average # years as an adult at recapture*</b>	<b>Maximum # years as an adult*</b>
San Gabriel	Bear Gulch	~1500-1650m	40	1.8	5	1.5	2
San Gabriel	Big Rock Creek	~1550-1730m	146	3.6	21	3.4	13
San Gabriel	Devils Canyon	~1600-1950m	101	1.6	7	2.2	5
San Gabriel	Little Rock Creek	~1750-2060m	499	4.0	23	3.8	13
San Gabriel	Vincent Gulch	~1360-1600m	45	1.8	4	2.2	6
San Bernardino	City Creek	~710-1030m	76	1.6	7	1.9	5
San Jacinto	Dark Canyon	~1400-2080m	156	3.1	22	3.7	18
San Jacinto	Fuller Mill	~1700-2060m	40	2.8	12	3.2	12

\*Does not Include 2-3 year-long tadpole stage.



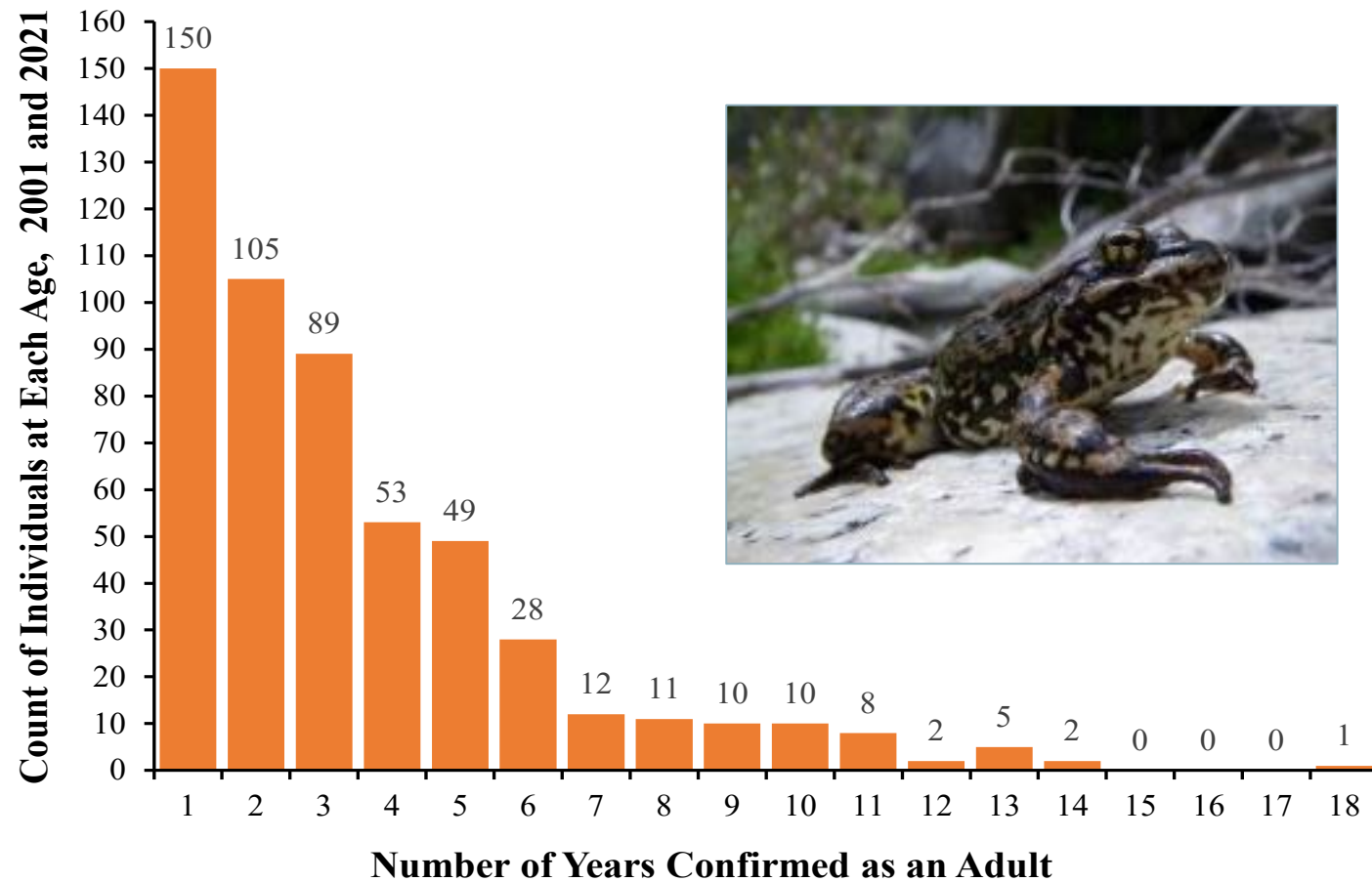




*Rana muscosa* ~20 year-old frog from the Dark Canyon population (PIT-tag number 053799366).

# *Southern Mountain Yellow-legged Frog* *Longevity*

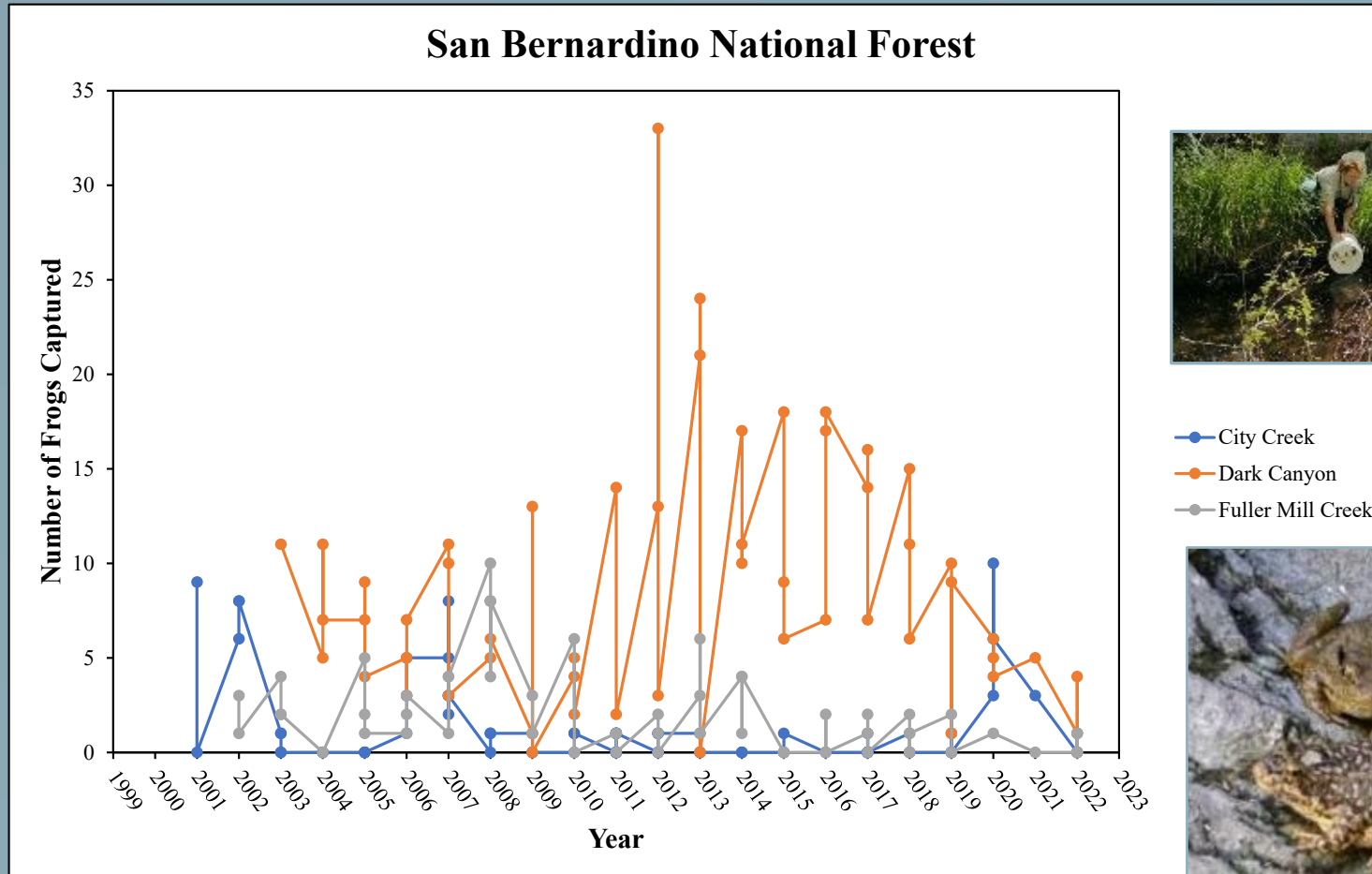
***R. muscosa* Adult Age Structure 2001-2022**



# Mountain Yellow-legged Frog



**Drought trends and continued need for introductions, captive bred from Zoo stocks**



- City Creek
- Dark Canyon
- Fuller Mill Creek



$N_0$	Initial number of populations									
	5	10	15	20	25	30	35	40	45	50
100	34%	11%	3.0%	0.8%	0.4%	0.0%	0.1%	0.0%	0.0%	0.0%
95	32%	12%	4.5%	1.4%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%
90	33%	12%	4.4%	1.4%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
85	34%	12%	3.9%	1.7%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%
80	35%	12%	3.5%	1.4%	0.5%	0.3%	0.1%	0.0%	0.0%	0.0%
75	33%	11%	4.3%	1.1%	0.9%	0.1%	0.1%	0.0%	0.0%	0.0%
70	35%	11%	3.6%	1.2%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
65	34%	11%	4.6%	1.9%	0.7%	0.0%	0.2%	0.0%	0.0%	0.0%
60	34%	14%	4.1%	1.6%	0.8%	0.2%	0.1%	0.0%	0.0%	0.0%
55	35%	11%	3.5%	0.6%	0.5%	0.2%	0.0%	0.0%	0.0%	0.0%
50	33%	13%	5.9%	1.0%	0.6%	0.0%	0.1%	0.0%	0.0%	0.0%
45	36%	16%	4.6%	1.5%	0.5%	0.3%	0.1%	0.0%	0.0%	0.0%
40	38%	13%	4.9%	2.2%	1.0%	0.3%	0.0%	0.1%	0.0%	0.0%
35	37%	13%	6.6%	1.6%	0.5%	0.2%	0.1%	0.0%	0.0%	0.0%
30	37%	15%	6.5%	1.7%	1.1%	0.2%	0.1%	0.2%	0.0%	0.0%
25	40%	14%	6.4%	1.8%	1.2%	0.5%	0.4%	0.0%	0.0%	0.1%
20	43%	16%	5.7%	3.2%	0.6%	0.3%	0.2%	0.0%	0.0%	0.0%
15	42%	18%	6.0%	2.4%	0.8%	0.3%	0.1%	0.0%	0.0%	0.0%
10	46%	23%	10%	4.3%	1.9%	0.6%	0.3%	0.2%	0.0%	0.1%
5	51%	29%	12%	7.0%	3.7%	1.7%	1.1%	0.4%	0.3%	0.1%

Note: Here, species extinction is defined as all populations going fully extinct (i.e.,  $N = 0$  frogs). Each scenario is defined by (i) the initial number of extant populations (columns) and (ii) the initial population size ( $N_0$ ) of each population (row). The color gradient represents an arbitrary scale for the risk of extinction (red = high; green = low).

TABLE 2 Probability of full extinction: Probability of species extinction, after 50 years, under various scenarios



### Defining relevant conservation targets for the endangered Southern California distinct population segment of the mountain yellow-legged frog (*Rana muscosa*)

Thierry Chambert<sup>1</sup> | Adam R. Backlin<sup>2</sup> | Elizabeth Gallegos<sup>2</sup> | Bradd Baskerville-Bridges<sup>3</sup> | Robert N. Fisher<sup>2</sup>

# *Using Environmental DNA (eDNA) to Aid in Mountain Yellow-legged Frog Recovery in Southern California*



# *Mountain Yellow-legged Frog - eDNA*

## **Environmental DNA (eDNA)**

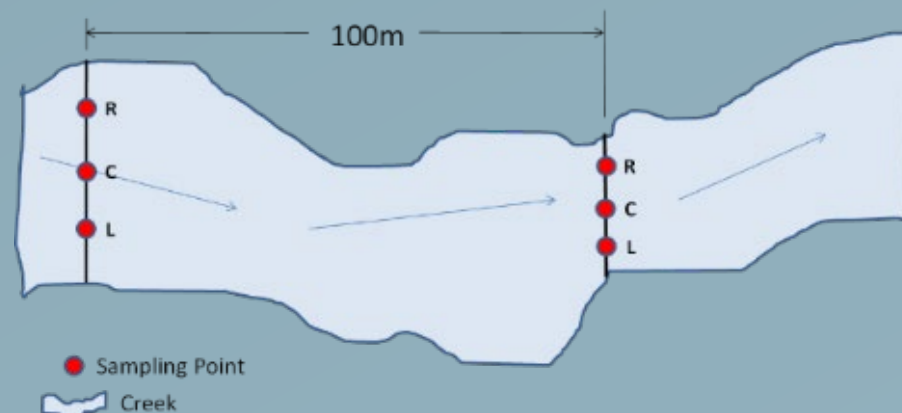
- Species shed DNA from skin cells, feces, urine, etc.
- Shed DNA in environment is known as eDNA
- eDNA can be collected from water samples using flow-through filters
- Analyzed with DNA ‘fingerprinting’ techniques.



# *Mountain Yellow-legged Frog - eDNA*

## Sampling

- We sampled water in 2012 from 3 streams known to support extant frog populations
- Evaluate each sample for 4 species (MYLF, trout, garter snake, Bd)
- To evaluate optimal timing of sampling, we collected and filtered water samples in the Summer and Fall.
- Filters are preserved in 95% ethanol



# *Mountain Yellow-legged Frog - eDNA*

## **Potential Applications**

- Useful? Possibly. Possible over/under estimates
- Conduct large scale inventory surveys for *R. muscosa* across historically occupied range & release sites
- Conduct inventory surveys that are often difficult to survey
- Confirm presence of trout within streams for *R. muscosa* restoration efforts





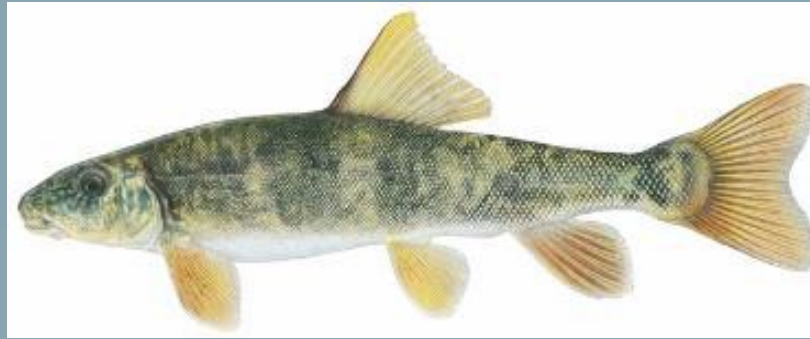
# Mountain Yellow-legged Frog - eDNA

## SBVMWD Funding

- 2020: COVID-19
- Set up an agreement with Washington State University, Caren Goldberg's Lab
- Develop assays
- Run samples



## *Next Steps*



- Future Santa Ana Sucker scenarios
- Continue MYLF monitoring and restoration
- Continue to resolve population sizes, management needs, and breeding locations for Southwestern Pond Turtles
- Expanding baseline information to other species including Two-striped and Red-sided Garter Snakes, Glossy Snakes, Horned Lizards, and more





# Discussion Items 4.1 – 4.3

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**Heather Dyer, MS, MBA** – Chief Executive Officer/General Manager

# Discussion Item 4.1

(Pg. 13)

Consider Authorizing the United States Geological Survey (USGS) Data Collection Program for Fiscal Year 2022 - 2023

# Board Motion & Roll Call Vote

## Staff Recommendation

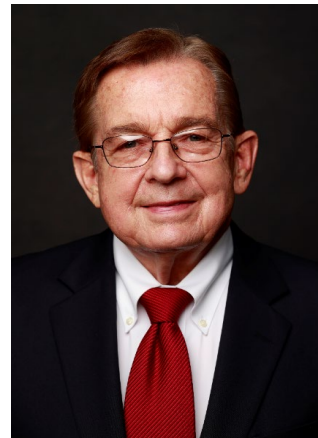
Staff is recommending the Board authorize the CEO/General Manager to execute the Joint Funding Agreement with the USGS for the FY 2022-23 data collection and monitoring program.



**Paul Kielhold**  
President



**June Hayes**  
Vice President



**T. Milford  
Harrison**  
Treasurer



**Gil J. Botello**  
Director



**Susan Longville**  
Director

# Discussion Item 4.2

(Pg. 21)

Consider Authorizing an Amendment with Dudek  
to Develop Well Ordinance for the Yucaipa  
Sustainable Groundwater Management Agency

# Board Motion & Roll Call Vote

## Staff Recommendation

Staff recommends the Board authorize the General Manager to execute an amendment with Dudek on behalf of the Yucaipa Sustainable Groundwater Management Agency (Yucaipa SGMA) at a cost of \$14,890. Valley District's share of this contact amendment is \$930.63.



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Vice President



**T. Milford  
Harrison**  
Treasurer



**Gil J. Botello**  
Director



**Susan Longville**  
Director

# Discussion Item 4.3 (Pg. 30)

Consider In-Person meetings or alternatively Resolution 1160 authorizing the San Bernardino Valley Municipal Water District to conduct remote meetings for the period September 6, 2022, through October 5, 2022



# Board Motion & Roll Call Vote

## Staff Recommendation

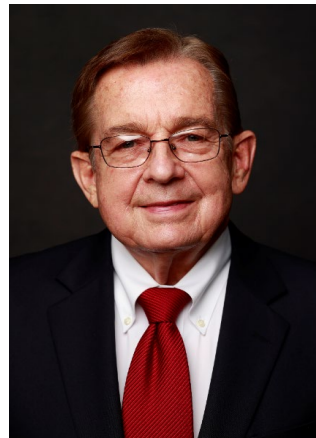
Receive feedback from legal counsel and determine if the Board would like to return to inperson meetings in the month of July. If the Board decides to continue with virtual meetings, consider adoption of Resolution 1160 authorizing the San Bernardino Valley Municipal Water District to conduct remote meetings for the period September 6, 2022, through October 5, 2022.



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President



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Vice President



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Harrison**  
Treasurer



**Gil J. Botello**  
Director



**Susan Longville**  
Director

# Reports Item 5.1 (Pg. 35)

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CEO/General Manager's Report

# Reports Item 5.2

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Directors' Report of Activities and Travel Requests in  
accordance with Resolution 1100

# Reports Item 5.3

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General Counsel Report

# Reports Item 5.4

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SAWPA Meeting Report

**Meeting  
CANCELLED**

# Reports Item 5.5 (Pg. 38)

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Board of Directors Workshop - Engineering - August 9, 2022

# Reports Item 5.6 (Pg. 44)

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Board of Directors Workshop - Policy- August 11, 2022

# Future Business

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# Announcements Item 7.1

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September 7, 2022, 8:30 a.m. – Upper SAR WIFA by Teleconference (Cancelled)

September 8, 2022, 2 p.m. – Board Workshop – Policy by Teleconference

September 13, 2022, 8:30 a.m. – SAWPA PA 22 Meeting- (Cancelled)

September 13, 2022, 2 p.m. – Board of Directors Workshop – Engineering by Teleconference

September 14, 2022, 8:30 a.m. – Upper SAR WIFA Technical Advisory Committee – by Teleconference

September 14, 2022, 1:30 p.m. – San Bernardino Valley Water Conservation District Board Meeting

September 15, 2022, 1 p.m. – Board of Directors Workshop – Branding by Teleconference and/or in-person

September 19, 2022, 1:30 p.m. – Save Our Water Press Conference (CSUSB)

September 19, 2022, 6 p.m. – ASBCSD dinner (Percy Bakker Community Center, Hesperia)



# Announcements Item 7.1

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September 20, 2022, 9:30 a.m. – SAWPA Commission Meeting

September 20, 2022, 2 p.m. – Regular Board Meeting by Teleconference

September 21, 2022, 8:30 a.m. – Upper SAR WIFA by Teleconference

September 28, 2022, 8:30 a.m. – Upper SAR WIFA Technical Advisory Committee – by Teleconference



# Closed Session

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# Adjournment

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