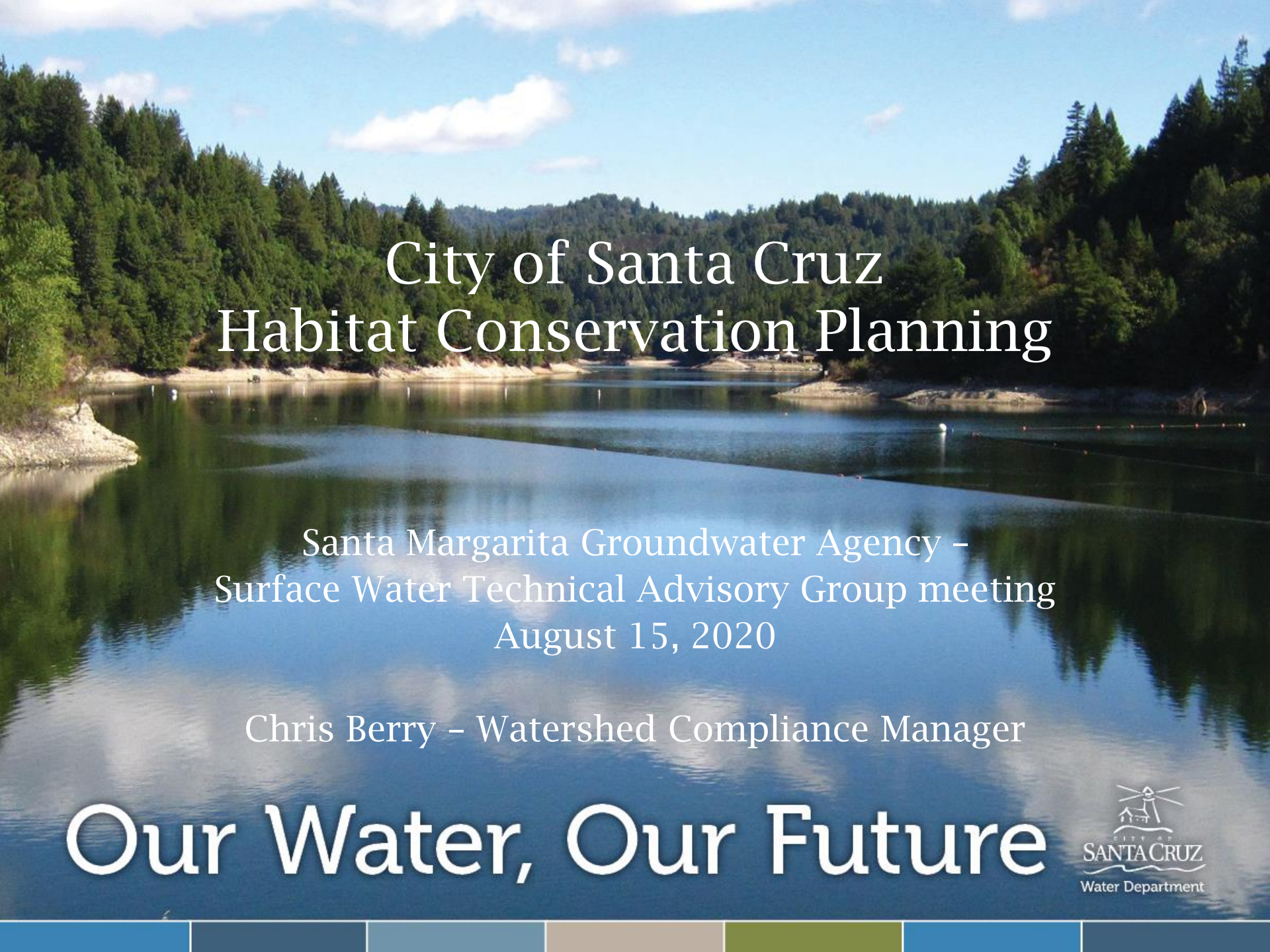


City of Santa Cruz
Habitat Conservation Planning

Santa Margarita Groundwater Agency –
Surface Water Technical Advisory Group meeting
August 15, 2020

Chris Berry – Watershed Compliance Manager

Our Water, Our Future

SANTA CRUZ
Water Department

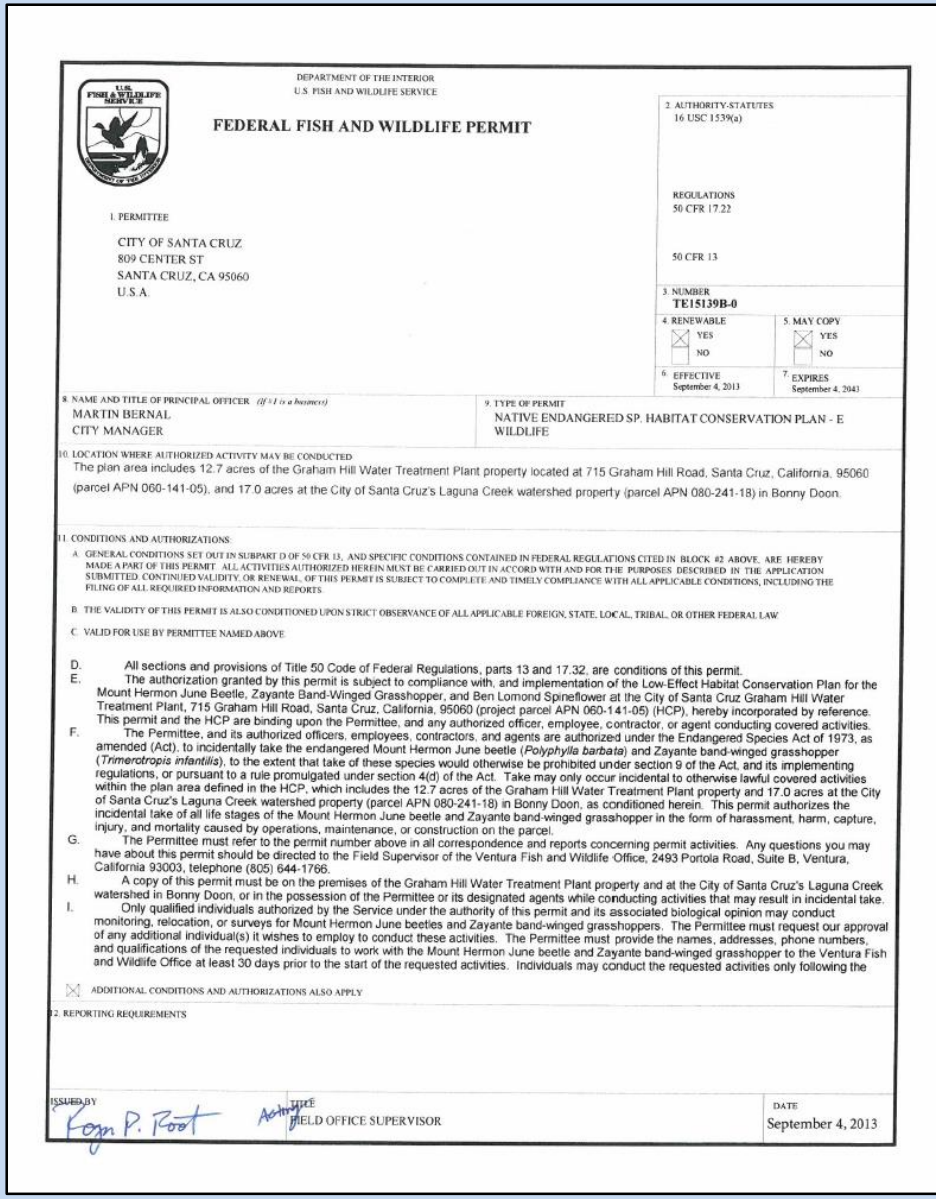
BACKGROUND ON SANTA CRUZ WATER SYSTEM

- Drinking water sources are primarily local surface water
- System serves approximately 95,000 people in multiple jurisdictions
- Aging infrastructure
- Water sources are extremely variable and provide habitat for several “special-status” species
- Per capita water use among the lowest in the state

Image: Santa Cruz Water System

WHAT IS AN HCP?

- Planning document required as part of an Incidental Take Permit under the Endangered Species Act (ESA)
- May include “special-status” listed species or unlisted species likely to be listed under the Endangered Species Act in the future
- Describes effects of covered activities that may result in “take” and how those effects will be tracked, avoided, minimized and mitigated
- Demonstrates funding assurances for plan implementation



DEPARTMENT OF THE INTERIOR
U.S. FISH AND WILDLIFE SERVICE

FEDERAL FISH AND WILDLIFE PERMIT

2. AUTHORITY-STATUTES: 16 USC 1539(a)

REGULATIONS: 50 CFR 17.22

50 CFR 13

1. PERMITTEE
CITY OF SANTA CRUZ
809 CENTER ST
SANTA CRUZ, CA 95060
U.S.A.

3. NUMBER: TE15139B-0

4. RENEWABLE: YES [X] NO [ ]

5. MAY COPY: YES [X] NO [ ]

6. EFFECTIVE: September 4, 2013

7. EXPIRES: September 4, 2043

8. NAME AND TITLE OF PRINCIPAL OFFICER (If it is a business)
MARTIN BERNAL
CITY MANAGER

9. TYPE OF PERMIT
NATIVE ENDANGERED SP. HABITAT CONSERVATION PLAN - E
WILDLIFE

10. LOCATION WHERE AUTHORIZED ACTIVITY MAY BE CONDUCTED
The plan area includes 12.7 acres of the Graham Hill Water Treatment Plant property located at 715 Graham Hill Road, Santa Cruz, California, 95060 (parcel APN 060-141-05), and 17.0 acres at the City of Santa Cruz's Laguna Creek watershed property (parcel APN 080-241-18) in Bonny Doon.

11. CONDITIONS AND AUTHORIZATIONS:

A. GENERAL CONDITIONS SET OUT IN SUBPART D OF 50 CFR 13, AND SPECIFIC CONDITIONS CONTAINED IN FEDERAL REGULATIONS CITED IN BLOCK #2 ABOVE, ARE HEREBY MADE A PART OF THIS PERMIT. ALL ACTIVITIES AUTHORIZED HEREIN MUST BE CARRIED OUT IN ACCORD WITH AND FOR THE PURPOSES DESCRIBED IN THE APPLICATION SUBMITTED. CONTINUED VALIDITY, OR RENEWAL, OF THIS PERMIT IS SUBJECT TO COMPLETE AND TIMELY COMPLIANCE WITH ALL APPLICABLE CONDITIONS, INCLUDING THE FILING OF ALL REQUIRED INFORMATION AND REPORTS.

B. THE VALIDITY OF THIS PERMIT IS ALSO CONDITIONED UPON STRICT OBSERVANCE OF ALL APPLICABLE FOREIGN, STATE, LOCAL, TRIBAL, OR OTHER FEDERAL LAW.

C. VALID FOR USE BY PERMITTEE NAMED ABOVE.

D. All sections and provisions of Title 50 Code of Federal Regulations, parts 13 and 17.32, are conditions of this permit.

E. The authorization granted by this permit is subject to compliance with, and implementation of the Low-Effect Habitat Conservation Plan for the Mount Hermon June Beetle, Zayante Band-Winged Grasshopper, and Ben Lomond Spineflower at the City of Santa Cruz Graham Hill Water Treatment Plant, 715 Graham Hill Road, Santa Cruz, California, 95060 (project parcel APN 060-141-05) (HCP), hereby incorporated by reference. This permit and the HCP are binding upon the Permittee, and any authorized officer, employee, contractor, or agent conducting covered activities.

F. The Permittee, and its authorized officers, employees, contractors, and agents are authorized under the Endangered Species Act of 1973, as amended (Act), to incidentally take the endangered Mount Hermon June beetle (*Polyphylla barbata*) and Zayante band-winged grasshopper (*Trimerotropis infantilis*), to the extent that take of these species would otherwise be prohibited under section 9 of the Act, and its implementing regulations, or pursuant to a rule promulgated under section 4(d) of the Act. Take may only occur incidental to otherwise lawful covered activities within the plan area defined in the HCP, which includes the 12.7 acres of the Graham Hill Water Treatment Plant property and 17.0 acres at the City of Santa Cruz's Laguna Creek watershed property (parcel APN 080-241-18) in Bonny Doon, as conditioned herein. This permit authorizes the incidental take of all life stages of the Mount Hermon June beetle and Zayante band-winged grasshopper in the form of harassment, harm, capture, injury, and mortality caused by operations, maintenance, or construction on the parcel.

G. The Permittee must refer to the permit number above in all correspondence and reports concerning permit activities. Any questions you may have about this permit should be directed to the Field Supervisor of the Ventura Fish and Wildlife Office, 2493 Portola Road, Suite B, Ventura, California 93003, telephone (805) 644-1766.

H. A copy of this permit must be on the premises of the Graham Hill Water Treatment Plant property and at the City of Santa Cruz's Laguna Creek watershed in Bonny Doon, or in the possession of the Permittee or its designated agents while conducting activities that may result in incidental take.

I. Only qualified individuals authorized by the Service under the authority of this permit and its associated biological opinion may conduct monitoring, relocation, or surveys for Mount Hermon June beetles and Zayante band-winged grasshoppers. The Permittee must request our approval of any additional individual(s) it wishes to employ to conduct these activities. The Permittee must provide the names, addresses, phone numbers, and qualifications of the requested individuals to work with the Mount Hermon June beetle and Zayante band-winged grasshopper to the Ventura Fish and Wildlife Office at least 30 days prior to the start of the requested activities. Individuals may conduct the requested activities only following the

[X] ADDITIONAL CONDITIONS AND AUTHORIZATIONS ALSO APPLY

12. REPORTING REQUIREMENTS

ISSUED BY: Karen P. Root (Acting)
TITLE: FIELD OFFICE SUPERVISOR
DATE: September 4, 2013

Right: Mount Hermon June beetle Endangered Species Act Section 10 ESA Permit

CITY OF SANTA CRUZ HCPs BACKGROUND

- Multiple species covered by 3 different habitat conservation plans for City activities

  -Admin draft Anadromous Salmonid HCP (ASHCP) submitted to NMFS/DFW on July 10, 2020

  -Administrative draft USFWS HCP currently in final review.

  -Low Effect Mount Hermon June beetle (MHJB) HCP being implemented currently

- City has officially been working on anadromous salmonid take authorization since May of 2001

- However, informal consultations were initiated shortly after listing in the 90s

SPECIES OF INTEREST

- Zayante band-winged grasshopper
- San Francisco popcorn flower
- Mount Hermon June beetle
- **California red-legged frog**
- Ben Lomond spineflower
- Western pond turtle
- Robust spineflower
- Santa Cruz tarplant
- **Ohlone tiger beetle**
- Tidewater goby
- Pacific lamprey
- **Steelhead trout**
- **Coho salmon**

SPECIES OF INTEREST (cont.)

Images: steelhead on left and coho on right. Photos courtesy of Morgan Bond

HCPs BACKGROUND (cont.)

- **ASHCP tentative timeline:**
  - Early 2023 permit execution goal
  - 30 years of implementation work
  - Linkage with water rights work is significant
- **Multi-species "O and M" HCP tentative timeline:**
  - 2020 permit execution goal.
  - Again, 30 years of implementation work
- **MHJB LE HCP implementation ongoing:**
  - MHJB historically present at the Graham Hill Water Treatment Plant.
  - Offsite mitigation for "take" at the GHWTP in place in the Laguna watershed (multiple benefits)

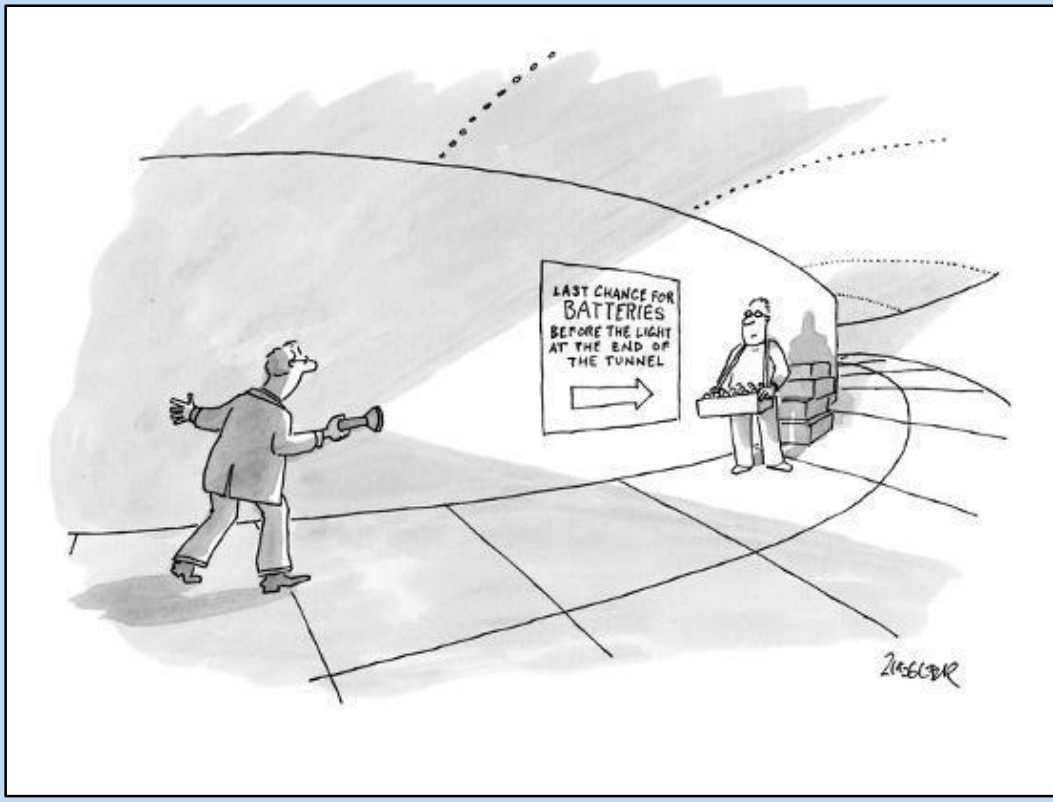
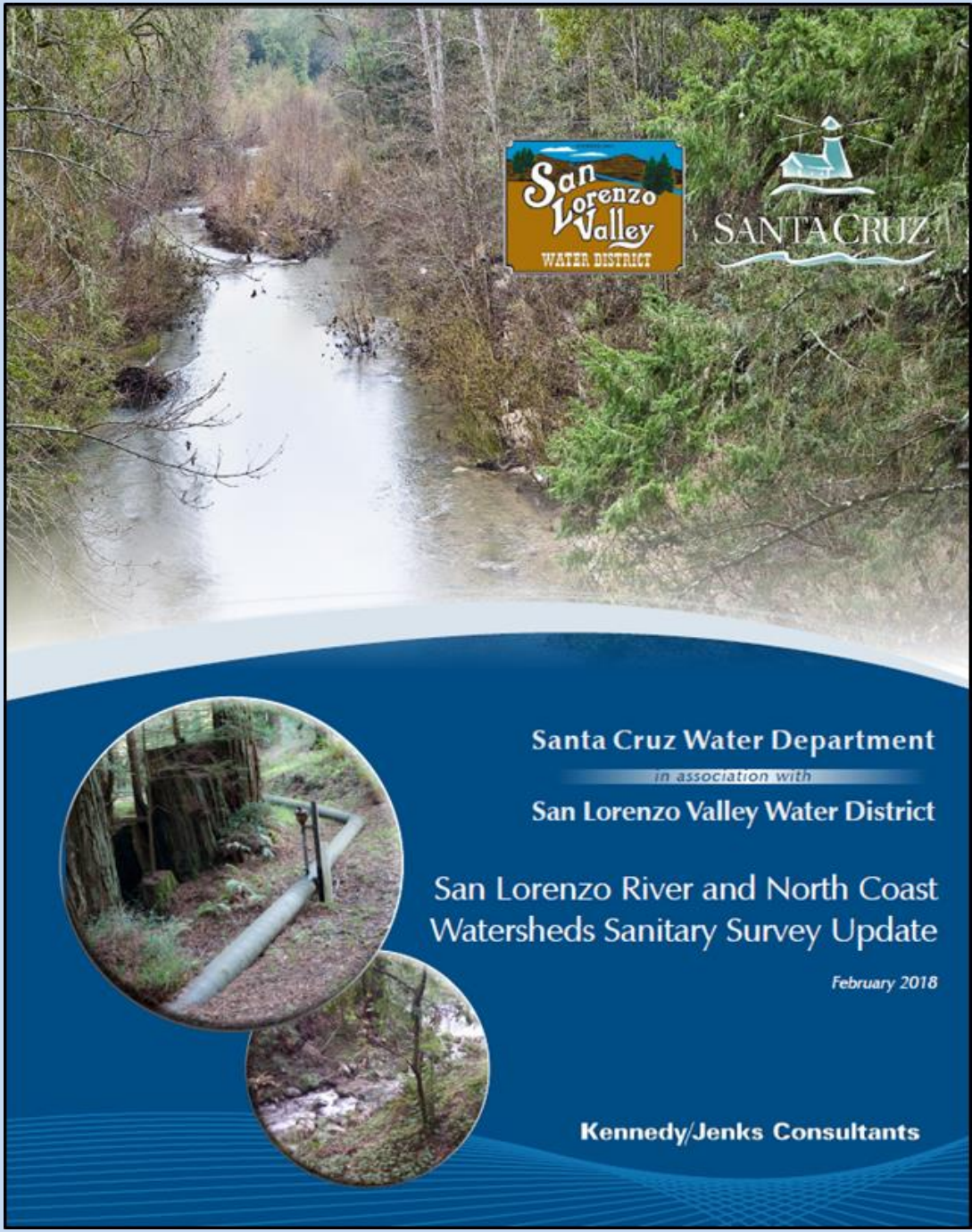


Image courtesy of the New Yorker

HCPs BACKGROUND (cont.)

- Many of the avoidance and minimization measures included in the HCPs are required by other regulations and included in other City permits so, in some cases, ESA compliance does not require additional work

- HCPs represent opportunities to support other agencies/conservation groups with environmental protection goals and achieve other Water Department goals vis-à-vis Drinking Water Source Protection



“COVERED ACTIVITIES” EXAMPLES

- **Flood control maintenance**
- **Pipeline maintenance and rehabilitation**
- Forest road management
- Reservoir algae management
- Land management
- **Water diversion and diversion maintenance**
- Other related operations which result in “take”

Image: North Coast pipeline repair with California red-legged frog “issues”

WHAT ARE WE PLANNING FOR CONSERVATION?

- Avoidance and Minimization
  - Instream Flow Improvements ("Agreed Flows/Conservation Flows")
  - Construction/Maintenance best management practices and avoidance/minimization measures, etc.

- Compensation for Remaining Biological Effects
  - Non-Flow Conservation Fund
  - Offsite mitigation

Image: First time water was bypassed for fish at the City's Laguna Diversion, 2008

CONSERVATION FLOWS

- Prioritize coho and watersheds with multiple benefits (Laguna, San Lorenzo)
- Address all life stages and hydrologic conditions, but prioritize limiting conditions (i.e. rearing in dry years)
- Based on significant study and discussion with DFW/NMFS
- Include long-term hydrologic variability and climate change projections
- Present a significant challenge to water supply reliability and require "Santa Cruz Water Rights Project" success

Image: First Laguna Creek coho reproduction observation in 10 years (2015)…and during the drought (but after implementation of minimum 2 cfs rearing flow)! Note: coho juveniles also recently observed in Laguna lagoon (June 2020). Photo: Chris Berry

MORE ON CONSERVATION FLOWS

Laguna Creek lagoon, 2004 (pre-bypass flows)

Photo: California Coastal Records Project

Laguna Creek lagoon, 2013 (post-bypass flows)*

Photo: California Coastal Records Project

**2013 was actually a drier year than 2004…*

CONSERVATION FLOWS (cont.)

Laguna Creek Flow Goals

	Minimum Flow at Laguna Creek Anadromous Gage (cfs)								
	Rearing Base flow					Migration		Spawning	
	Hydrologic condition 5 80-100% (driest)	Hydrologic condition 4 60-80% (dry)	Hydrologic condition 3 40-60% (normal)	Hydrologic condition 2 20-40% (wet)	Hydrologic condition 1 0-20% (very wet)	Adult	Smolt Migration[1]	Spawn[2]	Incubate3
Jan	2	2	2	2	2	11.3/15.5	3.8	9.4	4
Feb	2	2	2	2	2	11.3/15.5	3.8	9.4	4
Mar	2	2	2	2	2	11.3/15.5	3.8	9.4	4
Apr	2	2	2	2	2	11.3/15.5[4]	3.8	9.4	4
May	2	2	2	2	2		3.8	9.4	4
Jun	2	2	2	2	2				
Jul	2	2	2	2	2				
Aug	2	2	2	2	2				
Sep	2	2	2	2	2				
Oct	2	2	2	2	2				
Nov	2	2	2	2	2				
Dec	2	2	2	2	2	11.3/15.5		9.4	

[1.] Smolt migration flows shall be provided in 0-80% (hydrologic conditions 1-4), and for 3 consecutive days per week in 80%-100% (hydrologic condition5) in March, April, and May.

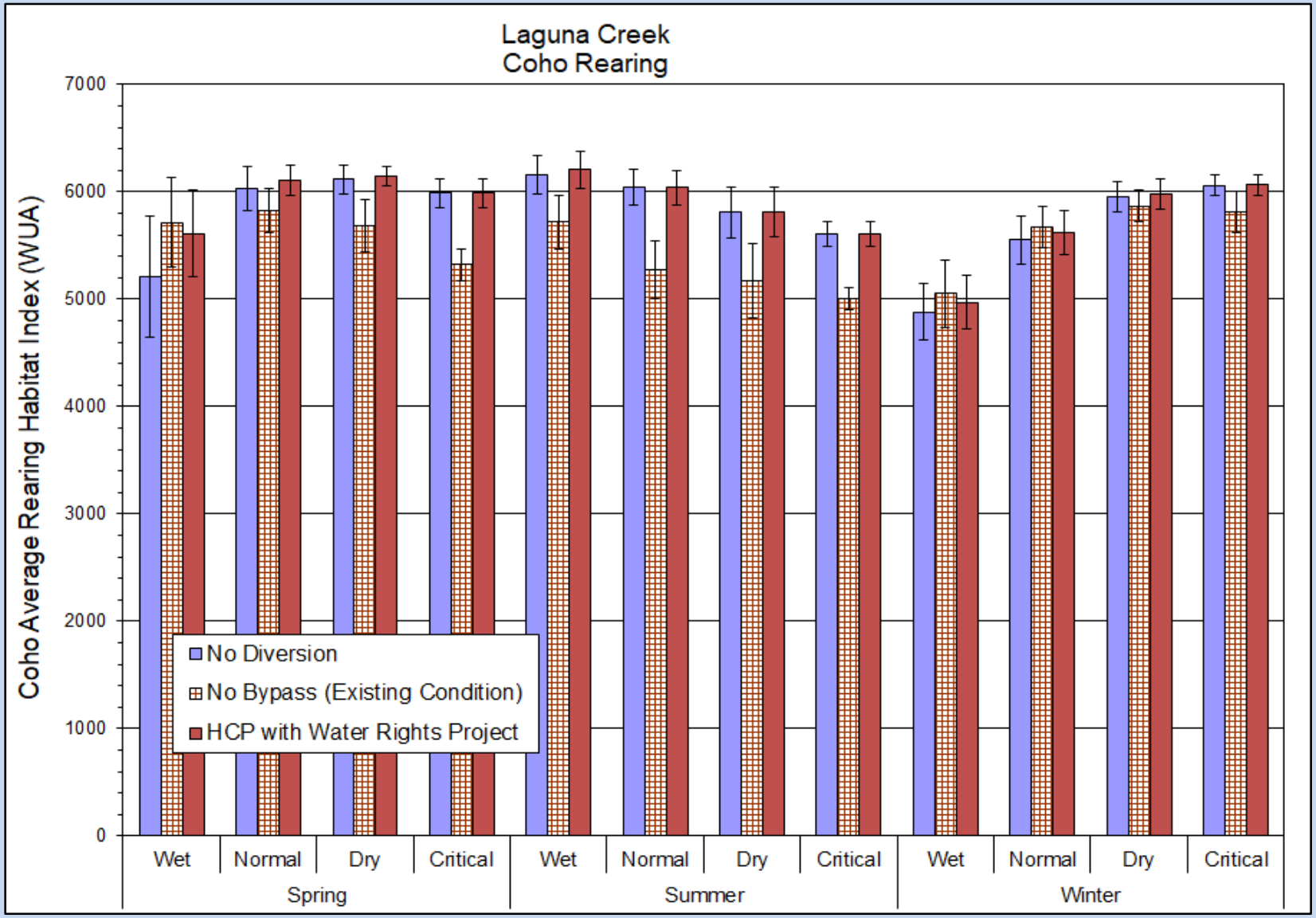
[2.] 80% of peak steelhead spawning WUA for 14-day period after any potential migration event.

[3.] For 60-day period following occurrence of last spawning flow or May 30, whichever occurs first.

[4.] April adult migration flows provided in 0-60% exceedance conditions/hydrologic conditions 1-3.

CONSERVATION FLOWS (cont.)

Laguna Creek Biological Effects Comparison



CONSERVATION FLOWS (cont.)

San Lorenzo River at Tait St. Flow Goals

	Minimum Flow in the San Lorenzo River below Tait Street (cfs)								
	Rearing Baseflow					Migration		Spawning[1]	
	Hydrologic condition 5 80-100% (driest)	Hydrologic condition 4 60-80% (dry)	Hydrologic condition 3 40-60% (normal)	Hydrologic condition 2 20-40% (wet)	Hydrologic condition 1 0-20% (very wet)	Adult[2]	Smolt Migration[3]	Spawn	Incubate
Jan	8	8	15.8	16.4	17.5	17/25.2	10		
Feb	8	8	15.9	16.7	18.0	17/25.2	10		
Mar	8	8	16.3	17.3	18.2	17/25.2	10		
Apr	8	8	17.2	17.9	18.4	17/25.2[4]	10		
May	8	8	17.7	18.2	18.5		10		
Jun	8	8	16.6	18.1	18.5				
Jul	8	8	12.4	15.8	18.2				
Aug	8	8	9.8	11.9	16.4				
Sep	8	8	9.0	11.1	13.3				
Oct	8	8	9.8	11.4	13.3				
Nov	8	8	12.5	14.1	16.4				
Dec	8	8	15.1	16.2	17.6	17/25.2			

[1] No spawning occurs in this reach.

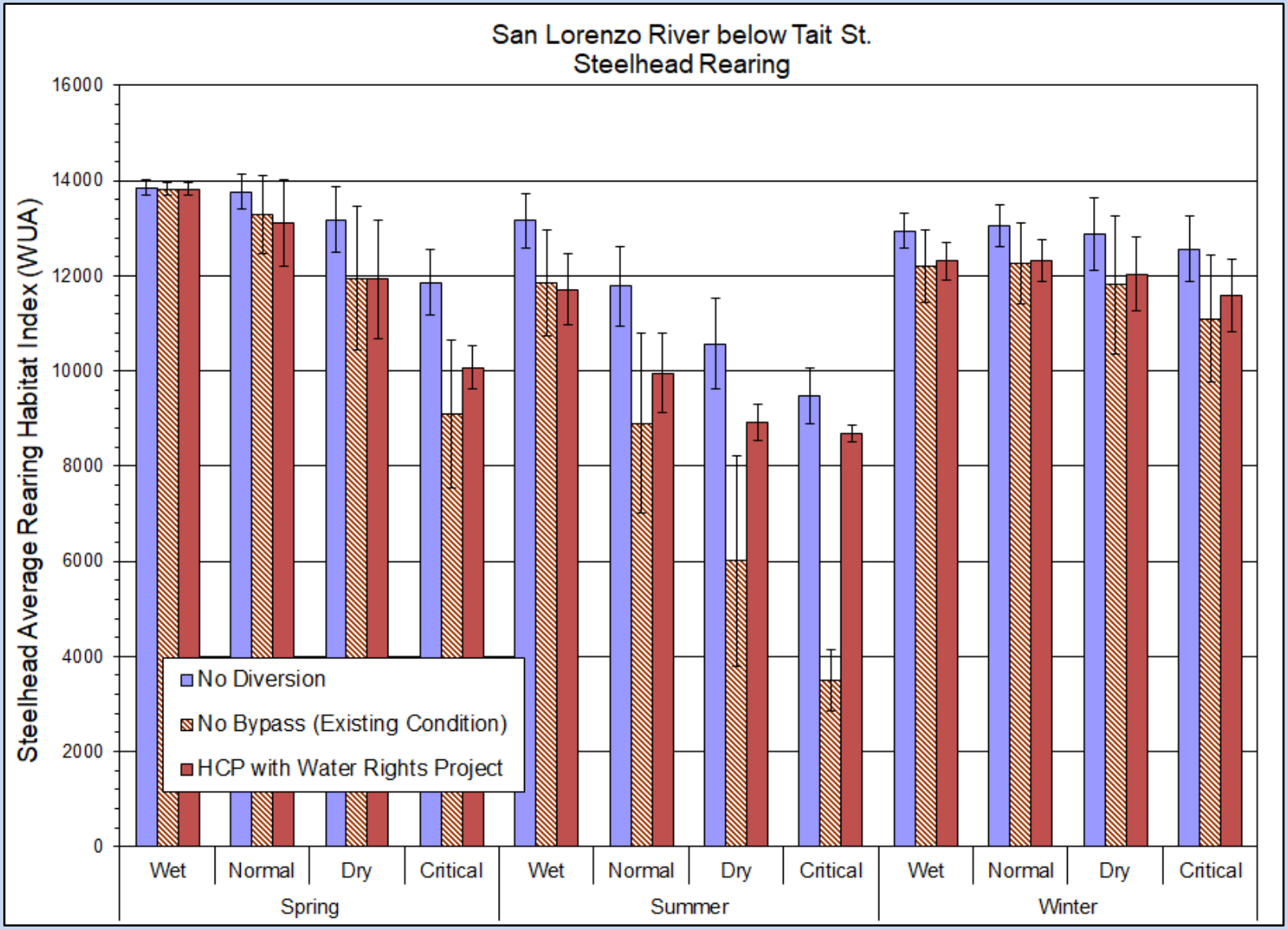
[2] Adult migration flows may be reduced to 3 consecutive days a week if storage levels in Loch Lomond Reservoir fall below the following levels (MG): Dec-1900 MG; Jan-2,000 MG; Feb-2,100 (MG); Mar-2,200 (MG). Further, adult migration flows may be reduced to 5 consecutive days after each storm event that exceeds 17 cfs if storage levels in Loch Lomond Reservoir fall below the following levels: Dec-1600 (MG); Jan-1700 (MG); Feb-1800 (MG); Mar-1900 (MG).

[3] During critically dry conditions (80%-100% Hydrologic condition) smolt outmigration flows shall be provided at least 3 days per week in March, April, and May. If additional water is determined to be required, the City may further reduce smolt outmigration requirements at the Tait Street Diversion provided that: (a) drought has been officially declared; and (b) this reduction in smolt outmigration opportunities will not reduce smolt migration more than one full day/week in the lower San Lorenzo River system or there is evidence from the San Lorenzo River or neighboring watersheds (i.e. Scott Creek) indicating that smolt migration is no longer occurring.

[4] April adult migration flows provided in hydrologic conditions 1-3.

CONSERVATION FLOWS (cont.)

San Lorenzo River at Tait St. Biological Effects Comparison



CONSERVATION FLOWS (cont.)

San Lorenzo River at Felton Flow Goals

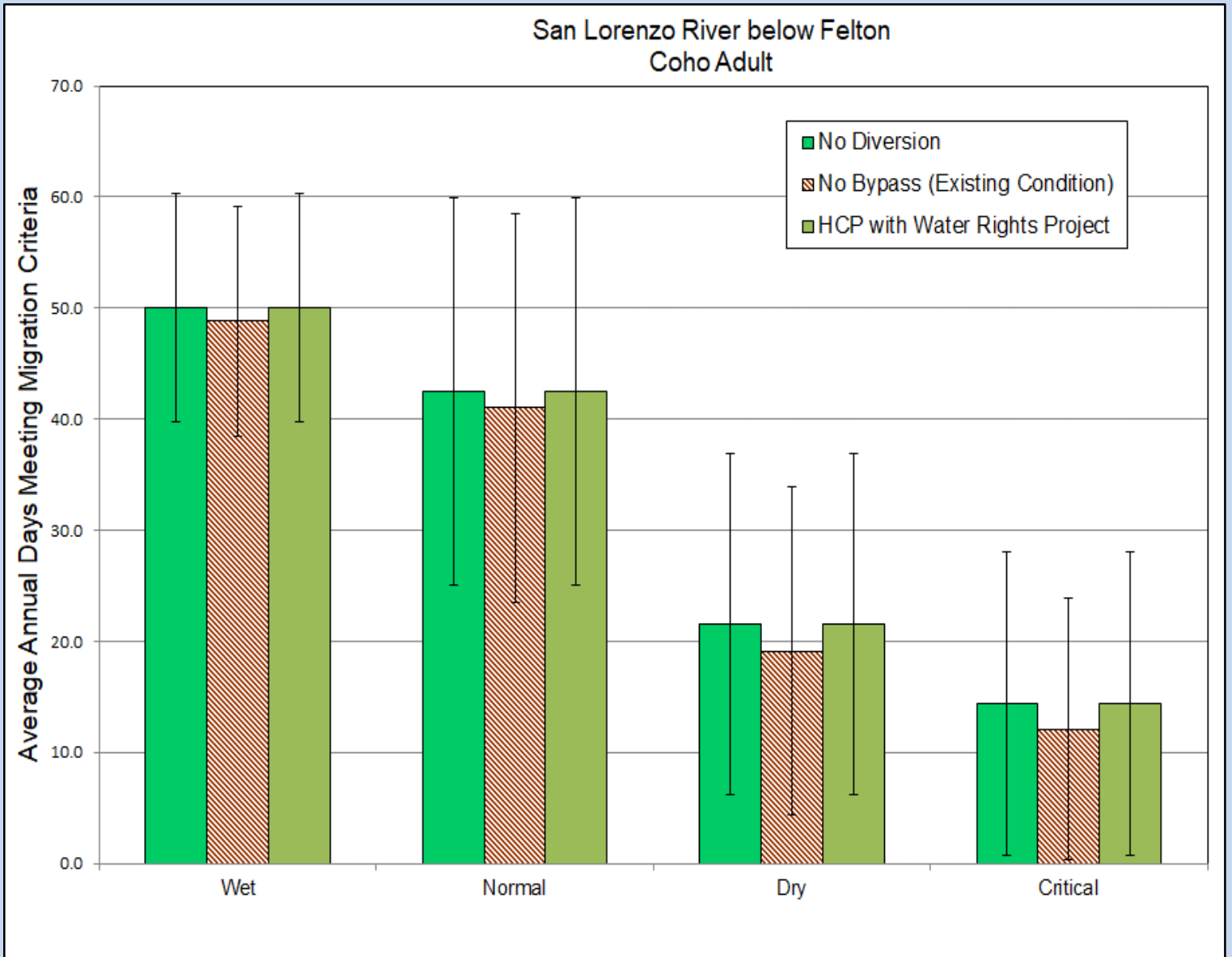
	Minimum Flow below the Felton Diversion (cfs)								
	All Life Stages					Migration		Spawning	
	Hydrologic Condition 5 80-100% (driest)	Hydrologic Condition 4 60-80% (dry)	Hydrologic Condition 3 40-60% (normal)	Hydrologic Condition 2 20-40% (wet)	Hydrologic Condition 1 0-20% (very wet)	Adult[1]	Smolt Migration	Spawn[2]	Incubate
Jan	20	20	20	20	20	40		40	
Feb	20	20	20	20	20	40		40	
Mar	20	20	20	20	20	40		40	
Apr	20	20	20	20	20	40		40	
May	20	20	20	20	20			40	
Jun	No Diversion								
Jul									
Aug									
Sep	10	10	10	10	10				
Oct	25	25	25	25	25				
Nov	20	20	20	20	20				
Dec	20	20	20	20	20	40		40	

[1] Provided in all hydrologic conditions when mouth has been open and natural flow would occur at this level without diversion.

[2] Provided for 14 days following any potential migration event.

CONSERVATION FLOWS (cont.)

San Lorenzo River at Felton Biological Effects Comparison



COMPENSATION FOR REMAINING EFFECTS

- Effects of operations which can't be offset with avoidance and minimization need to be otherwise compensated for…
  - Ex: support for coho recovery hatchery operations through the "Non-Flow Conservation Fund"

Top: Multi-agency coho rescue project
Bottom: Felton Diversion steelhead trapping. Photo courtesy of the Valley Press/Scotts Valley Banner

COMPENSATION FOR REMAINING EFFECTS (cont.)

Non-Flow Conservation Fund

- Regional conservation effort extending beyond the streams directly affected by City operations
- Guaranteed funding for restoration for 30 years
- Can help leverage other restoration funding and help conservation organizations focus on restoration and not chasing and administering grants

Top: Mountain Charlie Creek restoration, Bottom: San Lorenzo River watershed scientists at the first annual State of the San Lorenzo River Symposium

WHERE ARE WE NOW (AS HCP)?

- Finalize HCP!
- "Pre-implementation"

  -Rate structure which supports ongoing funding recently developed

  -Instream flow implementation

  -Restoration partnerships development and restoration project implementation:

    -Branciforte Creek passage improvements.
    -Zayante Creek enhancement project.
    -Coho recovery hatchery.
    -Regional Conservation Investment Strategy.

  -Ongoing monitoring:
    -Fishery surveys.
    -Flow and water quality monitoring.

Top: Laguna lagoon coho, June 2020. Photo courtesy of Hagar Environmental Science
Bottom: Zayante restoration project field tour, Feb 2020. Photo courtesy of Kristen Kittleson

HCPs RELEVANCE TO GROUNDWATER SUSTAINABILITY PLANNING

- Groundwater Dependent Ecosystems!
- Downstream municipal water supply and other beneficial use issues
- “Regulatory burden” issues
- Untapped regional water supply opportunities
- Overall collaboration benefits

Image: Bean Creek steelhead and coho, 2005.


Thanks!
Questions?
cberry”@”cityofsantacruz.com
Our Water, Our Future
SANTA CRUZ
Water Department