Ad Hoc Adaptive Management Plan Committee

College Lake Integrated Resources Management Project

Meeting No. 3, September 2, 2021, 2:00 PM

Pajaro Valley Water Management Agency

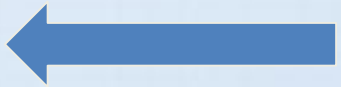
Vegetation Monitoring in AMP

- Intent is to effectively and efficiently inform management decisions
- A combination of three types is being considered
  - Mapping from aerial imagery, with ground-truthing
    - Identifies change in distribution of vegetation types
  - Reconnaissance survey from walking entire site
    - Identifies local, important changes not visible from imagery
  - Vegetation composition along permanently marked transects
    - Identifies change in abundance of desirable/undesirable species

Discussion of Draft Metrics & Action Triggers (Cont.) And Potential Management Actions

Discussing Core Content of the AMP

- Objectives
- Metrics and Action Triggers
- Potential management actions
- Decision-making and reporting



We are here

Objectives Linked to Proposed Metrics, Triggers, and Actions

Flooding		Vegetation	
Fish Passage		Waterfowl	
Water Storage		Invasive Animal Species	
Water Quality		Cultural Resources	
Farming		Research	

Flooding—Avoid exacerbating existing flood hazards outside the proposed water storage area

Metric	Management Action Trigger	Potential Management Actions (Abbreviated)
April–May precipitation	Occurrence of major precipitation event (> 1 inch rainfall) when weir is raised above 60.1 feet NAVD88	• Evaluate flooding effects from storm event, and likely effects of College Lake water surface and weir elevations on flooding • Revise procedure for defining last major storm of year, criteria for raising weir, or response to storm events after weir has been raised • ?

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Fish Passage—Facilitate fish passage between the Pajaro River and College Lake between December 15th and May 31st

Metric	Management Action Trigger	Potential Management Actions (Abbreviated)
Tagged smolts (number detected)	Significant difference between upstream and downstream sides of weir	• Inspect monitoring equipment • Review operational guidance and records • Evaluate weir, other equipment, and operations, and rectify identified issues • Reassess fish passage needs at potentially critical riffles • Consult w/ NMFS re fish passage flows • ?
Relative abundance of Age 0 steelhead (% of juveniles) in Casserly Creek and College Lake	Relative abundance in Casserly Creek/College Lake significantly less than in nearby stream systems	

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Water Storage—Preserve water storage capacity within College Lake.

Metric	Management Action Trigger	Potential Management Actions (Abbreviated)
Sediment/debris in ditches—Flow obstructions (presence and location) and ditch depth	Presence of a flow obstruction or depth decrease of 25% or more.	• Evaluate need for sediment removal • Remove sediment deposits • Identify contributing watershed factors • Coordinate with upstream landowners, RCD • ?
Sediment/debris on lakebed—elevation	Elevation increase > 2 inches by sediment/debris deposited on > 1,000 square feet (> 9 cubic yards).	

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Water Quality—Minimize conditions that can contribute to algal blooms, including cyanobacteria blooms.

Metric	Management Action Trigger	Potential Management Actions (Abbreviated)
Temperature profile (°C)	Water column temperature gradient > 5 °C	• Review monitoring data • Consult w/ experts, regulators • Reassess action triggers • Identify contributing watershed factors Coordinate w/ landowners, RCD • Treat College Lake w/ aluminum sulfate • Lower water level/drain College Lake • ?
Total phosphorus (mg/L)	Concentrations > 0.17 mg/L[a]	
Chlorophyll-a (µg/L)	Concentrations > 25 µg/L[a]	
Microcystins, total (µg/L)	Concentrations > 0.8 µg/L[a]	

a – Based on Pinto Lake Total Maximum Daily Load (TMDL) Pinto Lake and supporting assessments

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Farming—Promote farming within the College Lake basin between 59 feet and 63 feet elevation NAVD88

Metric	Management Action Trigger	Potential Management Actions (Abbreviated)
Acreage cultivated between 59 feet and 63 feet elevation NAVD88 in below normal, dry, or critical water years	Acreage cultivated in a below normal, dry, or critical water year below pre-project (2014–2021) range of cultivated acreages during below normal, dry, or critical water years.	• Conduct outreach • Revise leases • Adjust water diversion rate/timing • Adjust sediment/debris removal timing, frequency, or methods • Maintain, improve, or expand tile drain system • ?

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Vegetation—Sustain seasonal wetland and native vegetation

Metric	Management Action Trigger	Potential Management Actions (Abbreviated)
Seasonal wetland vegetation—acreage	Acreage less than 2017–2022 range of acreage	• Evaluate relationships of O&M to change • Modify timing or techniques of vegetation management. • Modify weir operations or water diversions • Implement control measures: disking/mechanical, hand removal, chemical treatment • Reassess/revise practices for limiting introduction/spread of invasive plants • ?
[*Additional metric forthcoming*]	[*Additional trigger forthcoming*]	
Woody riparian plants—location, estimated area, abundance, and height)	1 location > 0.1 acres in area with >0.5% cover of seedlings of woody riparian plants > 3 inches in height	
Prioritized Invasive Plants—Infestation coordinates, area, and species	1 new invasive plant infestation or >25% increase in area of existing infestation.	

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Waterfowl—Sustain waterfowl habitat quality in the proposed water storage area.

Metric	Management Action Trigger	Potential Management Actions (Abbreviated)
Median daily abundance of waterfowl guilds during December–March	Annual median of abundance below range of pre-project (2015–2021) medians	• Evaluate College Lake and regional monitoring data • Consult technical experts • Adjust vegetation management • Adjust water diversion rate/timing • ?

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Invasive Animal Species—Control invasive animal species pursuant to a plan approved by the appropriate regulatory agencies.

Metric	Management Action Trigger	Potential Management Actions (Abbreviated)
Species—Presence	Additional species detected	• Determine source of invasive species and develop and implement measures to control spread from identified sources • Adjust frequency, extent (partial or complete), or timing of lake draining • Physically capture and remove invasive animals • Revaluate invasive species control methods • ?
Species—# Individuals / unit area or sampling effort	Increasing trend in abundance	

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Cultural Resources—Preserve significant archaeological and historical resources and support tribal use of College Lake

Metric	Management Action Trigger	Potential Management Actions (Abbreviated)
Inspections for erosion or other impacts to Sites CA-SCR-44/H and CA-SCR-150.	Visible evidence of erosion or other damage.	• Develop and implement a plan to protect the site(s) • Recover archaeological resources if protective measures are infeasible

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Research—Support research and ~~citizen~~ community science focused on key uncertainties affecting management.

Metric	Management Action Trigger	Potential Management Actions (Abbreviated)
Studies addressing key prioritized data gaps (number)	0 studies initiated at College Lake in first 3 years of implementation	• Identify and make improvements to suitability of College Lake as a research site • Conduct additional targeted outreach to potential researchers

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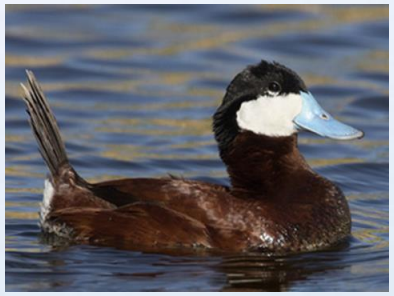
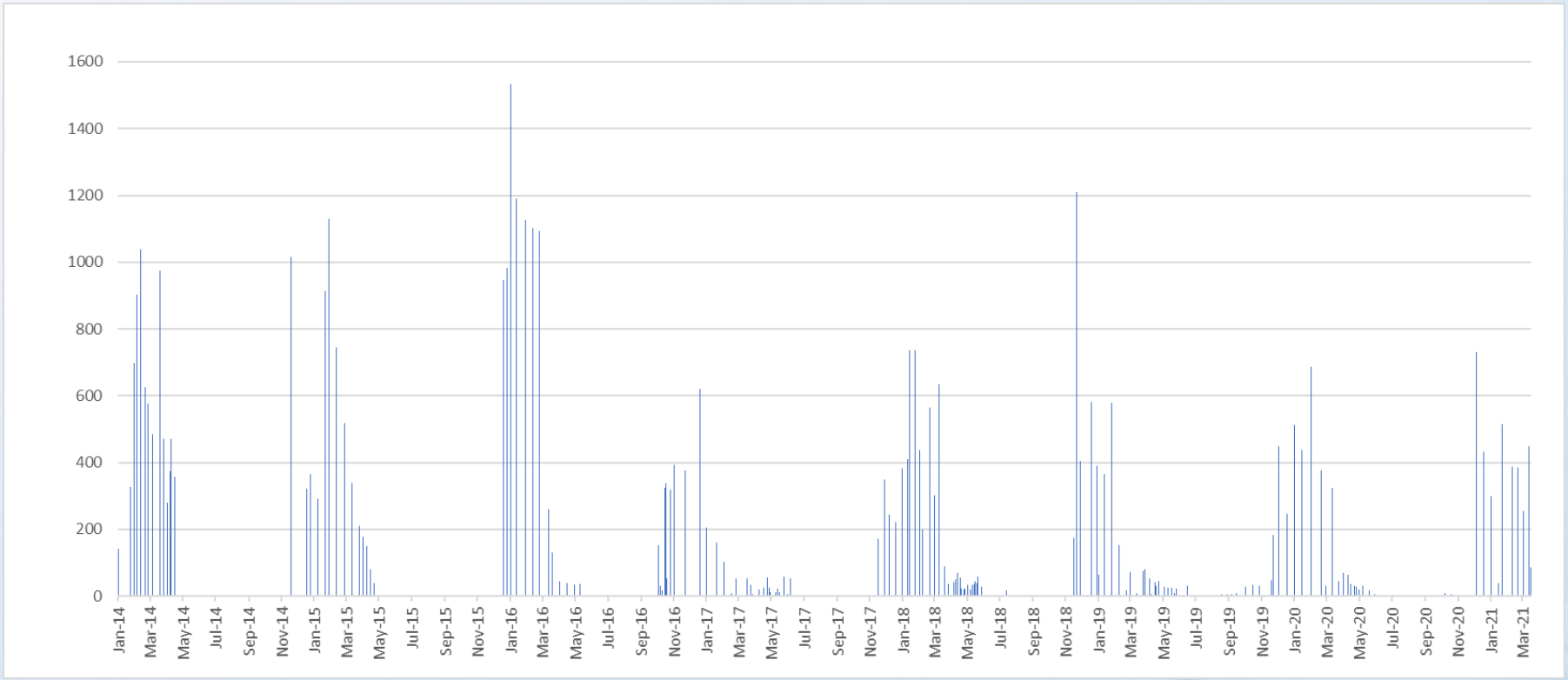
Thank You

EXTRA SLIDES

Waterfowl Abundance 2014—2021





Y axis = total number of tipping ducks observed