

**Pajaro River Watershed Integrated Regional Water Management Plan Update  
Project Solicitation Form**

**PROJECT OVERVIEW**

**General Project Information**

<b>Project Title:</b>	Pescadero Creek Steelhead and Pajaro River Baseflow Project
<b>Project Location:</b>	Highway 129, Chittenden, CA: 36°56'2.36"N, 121°37'18.18"W
<b>Estimated Cost:</b>	\$375,000

**Brief Project Description (1 to 2 sentences):**

Star Creek Ranch 2.5 miles of critical steelhead habitat on Pescadero Creek, a tributary with that joins the Pajaro River near Chittenden. The project would enhance sites on the creek, ponds on class 3 tributaries, and ranch roads to increase baseflow conditions on Pescadero Creek and groundwater recharge along the Pajaro River, and to improve habitat for steelhead, California red legged frogs and western pond turtles.

**Project Proponent Information**

<b>Contact Name:</b>	Bryan Largay
<b>Affiliation:</b>	The Land Trust of Santa Cruz County
<b>Address:</b>	617 Water Street, Santa Cruz CA 95060
<b>Phone Number:</b>	831-429-6116, x310
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**Other participating agencies/organizations (if applicable):**

Natural Resources Conservation Service, Cal Fire

**DETAILED PROJECT INFORMATION**

**Description**

**Please provide a description of your project (including the location) and its purpose, what will be constructed and/or implemented, how the project will function, the area(s) and/or entities that will be affected by or will benefit from the project, and any potential obstacles to implementation.**

Star Creek Ranch, located in the Pajaro Hills, is being purchased by the Land Trust of Santa Cruz County to protect it from development. The project consists of three sets of actions on the ranch to improve regional water management: 1. It will restore stream and riparian steelhead habitat at three sites on Pescadero Creek. 2. It will improve existing ponds located on ephemeral drainages to increase baseflow in Pescadero Creek and the Pajaro River. 3. It will capture stormwater runoff from ranch and forest roads to reduce water quality impacts to Pescadero Creek and increase infiltration of runoff. Pescadero Creek is a perennial stream and provides critical habitat for the federally threatened South-Central California Coast Steelhead. Moreover, the project will demonstrate - on property readily available for tours - practices that private landowners can implement to integrate the management of water resources on their own land. Detail on Action 1: Restoration of impaired stream and riparian habitat on Pescadero Creek will increase the viability of steelhead in the Pajaro Watershed. According to John Ambrose of the National Marine Fisheries Service (NMFS), "Pescadero Creek has some of the best remaining and most intact steelhead habitat in the Pajaro River Watershed - maintaining this habitat is essential to

**Pajaro River Watershed Integrated Regional Water Management Plan Update  
Project Solicitation Form**

the best remaining and most intact steelhead habitat in the Pajaro River watershed... maintaining this habitat is essential to the long term conservation, survival, and recovery of this species in the Pajaro River watershed," (NMFS, 2008). Pescadero Creek also provides habitat for the federally threatened California red-legged frog and the southwestern pond turtle, which is a California Species of Special Concern (Allaback, M. 2010). The Pajaro River is a priority watershed for the recovery of steelhead in the southern Central Coast (NMFS, 2012 (draft)). Detail on Action 2: Improvement of existing ponds will more reliably detain winter flows and increase summer baseflow. Groundwater overdraft is a major resource concern in the Lower Pajaro Valley. The Pajaro River contributes substantial surface inflow in the lower Pajaro Valley groundwater basin (PWWMA Basin Plan). Increasing baseflow conditions in the Pajaro River will sustain this recharge function by reducing the extent of unsaturated conditions in the river bed, which impedes groundwater recharge. Retention of winter flows will also marginally reduce flood peaks downstream. Detail on Action 3: The ranch hosts 25 miles of ranch and logging roads, which yield sediment to Pescadero Creek and its tributaries. Implementation of best management practices on these roads will reduce sediment yield and capture and recharge groundwater. Examples of such practices include out-sloping roads, installation of rolling dips, replacing undersized culverts, capturing runoff, and relocating roads out of stream crossings.

**Technical Feasibility**

**Discuss the technical feasibility of the project. If possible, cite references that contain information about the proposed project and detail the technical feasibility of the project.**

This project implements standard USDA - Natural Resources Conservation Service and Cal Fire practices for the restoration of the stream sites, ponds and road conditions, which can be reasonably be expected to advance the goals of the project: increasing the abundance of steelhead, increasing the abundance of California red-legged frogs, and increasing the persistence of baseflow conditions in Pescadero Creek and the Pajaro River, and decreasing the delivery of fine sediment to class 1 streams.

**Pajaro River Watershed IRWM Regional Goals & Objectives**

**Put an X next to any goal that the proposed project will achieve.**

**Water Supply**

	1. Meet 100% of M&I and agriculture demands (both current and future conditions) in wet to dry years including the first year of a drought.
	2. Meet 85% M&I and 75% agriculture demands (both current and future conditions) in second and subsequent years of a drought.
	3. Identify and address water supply needs of disadvantaged communities in the Pajaro River Watershed.
	4. Implement water conservation programs to reduce M&I and agricultural water use consistent with SBx7-7 and CVPIA.
	5. Maximize the use of recycled water during the irrigation season and expand other uses of recycled water.
X	6. Optimize the use of groundwater and aquifer storage.

**Pajaro River Watershed Integrated Regional Water Management Plan Update  
Project Solicitation Form**

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|  | 7. Maximize conjunctive use opportunities including interagency conjunctive use.                                |
|  | 8. Optimize and sustain the use of existing import surface water entitlements from the San Felipe Unit.         |
|  | 9. Maximize the beneficial use of existing local water supplies while protecting existing surface water rights. |

**Water Quality**

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|---|--|
| X | 1. Meet or exceed all applicable groundwater, surface water, wastewater, and recycled water quality regulatory standards.                      |
|   | 2. Identify and address the drinking water quality of disadvantaged communities in the Pajaro River Watershed.                                 |
|   | 3. Protect groundwater resources from contamination including salts and nutrients.   |
| X | 4. Address impacts from surface water runoff through implementation of Best Management Practices or other surface water management strategies. |
|   | 5. Meet or exceed delivered water quality targets established by recycled water users.   |

**Pajaro River Watershed Integrated Regional Water Management Plan Update  
Project Solicitation Form**

**Flood Protection**

X	1. Implement flood management strategies throughout the watershed that provide multiple benefits.
	2. Reach consensus on the Pajaro River Risk Reduction Project necessary to protect existing urban areas and infrastructure from flooding and erosion from the 100-year event and to maximize opportunities to protect agricultural land uses.
X	3. Work with stakeholders to preserve existing flood attenuation by implementing land management and conservation strategies throughout the watershed.
	4. Develop approaches for adaptive management to minimize maintenance requirements and protect quality and availability of water while preserving ecologic and stream functions.
X	5. Provide community benefits beyond flood protection such as public access, open space, recreation, agriculture preservation and economic development.

**Environmental Protection and Enhancement**

X	1. Address opportunities to enhance the local environment and protect and/or restore natural resources, in cooperation with landowners, when developing water management strategies.
X	2. Improve biological and cultural resources, including riparian habitats, habitats supporting sensitive plant or animal species and archaeological/historic sites when implementing strategies and projects.
0	3. Address opportunities to protect, enhance, or restore habitat to support Monterey Bay National Marine Sanctuary marine life in conjunction with water supply management strategies.
X	4. Address opportunities for open spaces, trails, parks along creeks and other recreational projects in the watershed that can be incorporated with water management strategies, consistent with public use and property rights.

**Integration and Coordination**

**Put an X next to any Resource Management Strategies (RMS) that the proposed project will address.**

Reduce Water Demand	Agricultural Water Use Efficiency	
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**Pajaro River Watershed Integrated Regional Water Management Plan Update  
Project Solicitation Form**

Improve Operational Efficiency and Transfers	Urban Water Use Efficiency	
	Conveyance - Delta	
	Conveyance - Regional/local	
	System Reoperation	
	Water Transfers	
Increase Water Supply	Conjunctive Management & Groundwater Storage	X
	Desalination	
	Precipitation Enhancement	
	Recycled Municipal Water	
	Surface Storage - CALFED	
	Surface Storage - Regional/local	<b>0</b>
Improve Water Quality	Drinking Water Treatment & Distribution	
	Groundwater Remediation /Aquifer Remediation	
	Matching Quality to Use	
	Pollution Prevention	X
	Salt & Salinity Management	
	Urban Runoff Management	
Improve Flood Management	Flood Risk Management	
Practice Resources Stewardship	Agricultural Lands Stewardship	X
	Economic Incentives (Loans, Grants, & Water Pricing)	
	Ecosystem Restoration	X
	Forest Management	X
	Recharge Area Protection	
	Water-Dependent Recreation	
	Watershed Management	X
Other Strategies	Crop Idling for Water Transfers	
	Dewvaporation or Atmospheric Pressure Desalination	
	Fog Collection	
	Irrigated Land Retirement	
	Rainfed Agriculture	
	Waterbag Transport/Storage Technology	
<b>Please describe:</b>	<p>This project will increase <b>groundwater recharge</b> and storage by helping to sustain baseflows in the Pajaro river, which recharges the Aromas aquifer. This project will <b>prevent pollution</b> by capturing runoff from unpaved ranch roads and promoting infiltration. This project will demonstrate <b>agricultural lands stewardship</b> and <b>forest management</b> as it is a working ranch and forest property owned by the Land Trust where growers and timber harvesters can observe best management practices. This project is an example of <b>watershed management</b> as it restores the condition of a significant tributary and the surrounding uplands.</p>	

***Pajaro River Watershed Integrated Regional Water Management Plan Update  
Project Solicitation Form***

**List the projects that were integrated to develop a single proposed project, if applicable.**

Water supply and environmental enhancement goals were combined to develop this project. The stream, ponds and watershed roads will be enhanced to optimize for increasing groundwater recharge, habitat conditions, and water quality improvement, rather than a single goal. Combining the goals has led to different design criteria that what would have been used for each of the project elements in isolation.

**List the agencies and organization that are working together to implement the project.**

We plan to work with the Natural Resources Conservation Service and the California Department of Forestry and Fire Protection through enrollment in their technical assistance and cost share programs.

**Pajaro River Watershed Integrated Regional Water Management Plan Update  
Project Solicitation Form**

**Climate Change Mitigation and Adaptation**

Put an X next to any climate change adaptation or mitigation strategy the proposed project will contribute to.

**Adaption Strategies**

X	Improve water supply reliability
	Expand conjunctive use of multiple water supply sources
	Increase water use and/or reuse efficiency
	Provide additional water supply
X	Promote water quality protection
	Reduce water demand
	Advance / expand recycled water use
	Promote urban runoff reuse
	Address sea level rise
	Address other anticipated climate change impacts
X	Improve flood control
X	Promote habitat protection
X	Establish migration corridors
X	Re-establish river-floodplain hydrologic continuity
	Re-introduce anadromous fish populations to watershed
X	Enhance and protect watershed forest and meadow systems

**Please describe:** Increased groundwater recharge resulting from the project will **improve water supply reliability**. Forest and rangeland road runoff management will **promote water quality protection** and **enhance and protect watershed forest and meadow systems**. Enhancement of ponds and stormwater management will **improve flood control**. Riparian and stream restoration will **promote habitat protection, establish migration corridors** and **re-establish river-floodplain hydrologic connectivity**.

**Mitigation Strategies**

	Increase water use efficiency or promote energy-efficient water demand reduction
	Improve water system energy efficiency
	Advance / expand recycled water use
	Promote urban runoff reuse
	Promote use of renewable energy sources
X	Contribute to carbon sequestration

**Please describe:** Redwood and other riparian forest restoration will **contribute to carbon sequestration** by increasing the stock of trees on the property.

**Does the proposed project reduce regional greenhouse gas emissions and/or improve energy efficiency? If so, explain how.**

**Pajaro River Watershed Integrated Regional Water Management Plan Update  
Project Solicitation Form**

The project reduces net regional greenhouse gas emissions by increasing carbon sequestration in the standing trees of the forest.

**Social Benefits and Impacts**

**Does the project provide specific benefits to disadvantaged communities and/or Native American tribal communities? If so, explain.**

Communities of the Pajaro Valley, including the town of Pajaro and limited resource growers in the region, will benefit from marginal increases in water supply reliability.

**Does the project address any known environmental justice issues?**

No.

**Project Cost**

<b>Total Estimated Capital Cost</b>	\$375,000
<b>Annual Operation &amp; Maintenance (O&amp;M) Cost</b>	\$15,000
<b>Cost Basis (Year)</b>	2012
<b>Source(s) of Funding for Capital</b>	USDA Environmental Quality Incentives Program; Cal Fire California Forest Improvement Program
<b>Source(s) of Funding for O&amp;M Cost</b>	Land revenues from timber harvest and grazing lease
<b>Project Life (years)</b>	30
<b>Provide link to project cost estimate, if available</b>	Cost estimate is not online.

**Economic Feasibility**

A benefit: cost analysis has not been completed for this project. It will be completed in 2013 as part of the feasibility study.

**If known, please provide the Benefit: Cost Ratio.**

**Provide a detailed discussion of the benefits the project will provide. To the extent possible, quantify changes and benefits (e.g. water quality and water supply benefits) that will result from project implementation; otherwise, describe benefits qualitatively.**

The project will increase the number of steelhead produced by the Pajaro River watershed. The project will increase the baseflow of Pescadero Creek and (marginally) the Pajaro river, reducing the development of unsaturated conditions in the streambeds, which reduces the rate of recharge. The project will increase the number of acre-feet of groundwater recharged to the Aromas aquifer. The project will increase the abundance of California red legged frogs in the watershed. The project will reduce the load of sediment to the Pajaro river.

**Pajaro River Watershed Integrated Regional Water Management Plan Update  
Project Solicitation Form**

**Project Readiness**

<b>Proposed Project Start Date:</b>	2013
<b>Anticipated Project Completion Date:</b>	2016

Please Indicate the status (pending, in process, complete) of the following.

<b>Project Element</b>	<b>Status</b>	<b>% Complete</b>	<b>Estimated Completion Date</b>
<i>Feasibility Study</i>	Underway	25	2013
<i>Preliminary design</i>	not started		2014
<i>CEQA/NEPA</i>	not started		2015
<i>Permit Acquisition</i>	not started		2015
<i>Construction Docs</i>	not started		2016