

# Trees over Tech

## Riparian Restoration for NPDES Permit Compliance



David Primozich, Conservation Director  
The Freshwater Trust



The  
Freshwater Trust® [www.thefreshwatertrust.org](http://www.thefreshwatertrust.org)

# The Freshwater Trust

A 501(c)(3) non-profit organization with a 30-year history of actively working to preserve and restore freshwater ecosystems.



## Habitat & Flow Restoration

Restoring stream, off-channel and riparian habitat to improve functional conditions for fish.



## Ecosystem Accounting & Analysis

Measuring ecosystem services and translating them into units that make sense in a regulatory context.



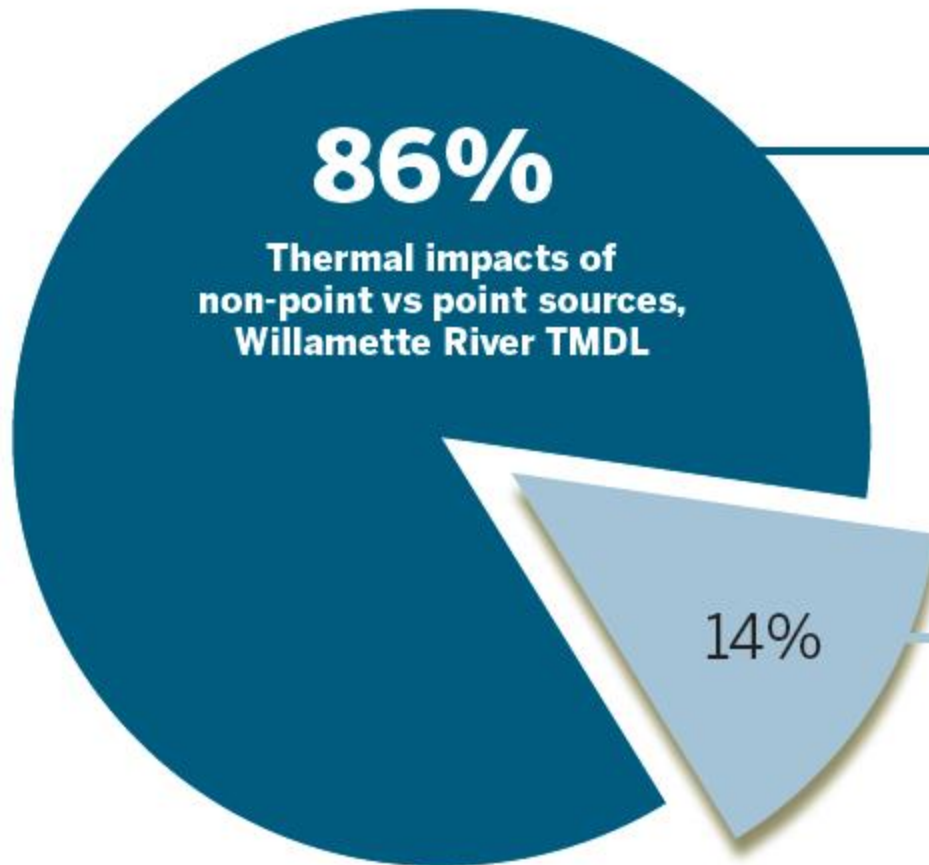
## Credit Program Management

Applying compliance-driven investments to needed habitat and water quality improvements.





# New Approaches to Meet NPS Challenge



**Non-Point Source**



**Point Source**

Source  
<http://www.deq.state.or.us>



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# Water Quality Trading 101

- Point Source (PS) to Nonpoint Source (NPS) water quality trading (WQT) is when a regulated point source is able to secure and document pollution reductions from a nonpoint source.
- PS to NPS water quality programs can be more cost-effective and often make better **ecological** sense than controls at the point of discharge
- To be successful, WQT programs must have:
  - **Standards** for eligible projects and project quality
  - Standards for **credit measurement**
  - **Transparent systems** for reporting and tracking performance and custody of credits



# Case Study: Medford, OR

Buyer: City of Medford (population 170,000)

Seller: 20+ landowners in Rogue River Basin

Contractor: The Freshwater Trust

Driver: Projected excess heat under TMDL limits:

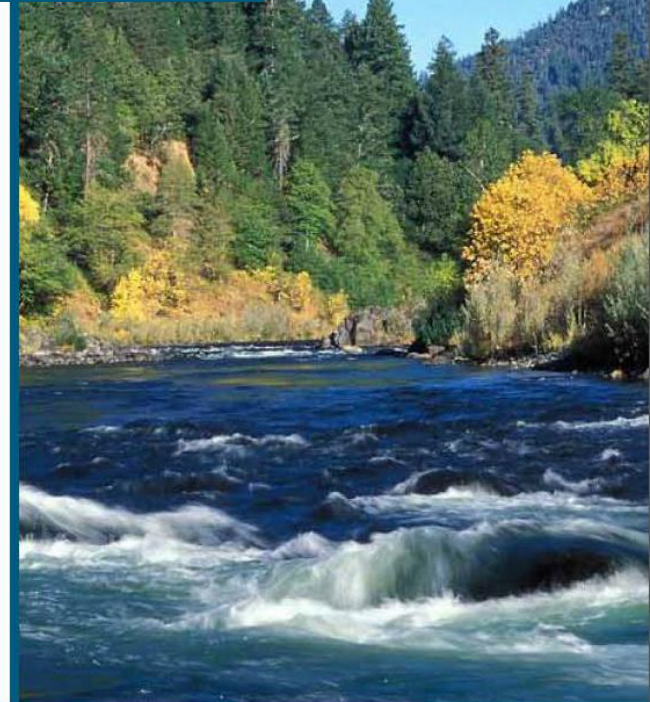
300 million kcals/day in 10 years

Options:

- Giant holding pond to store water for 1 month of each year: \$16 million
- 10-15 miles of native riparian vegetation restored and maintained for 20 years: \$6.5 million

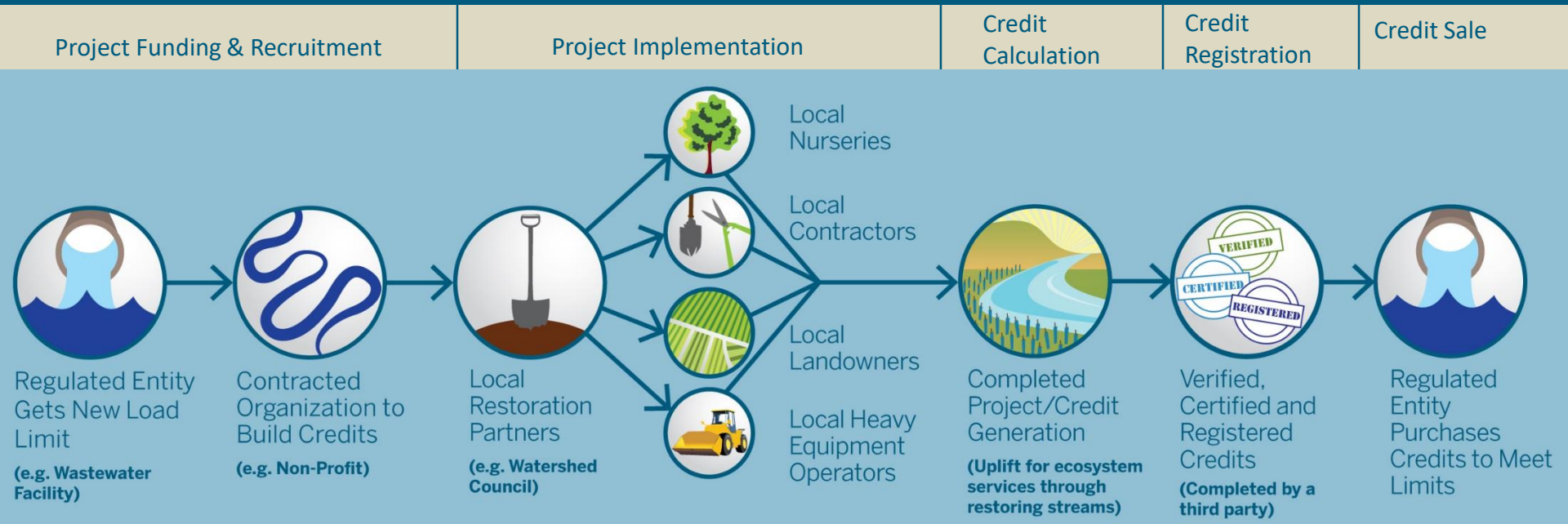
With trading program for riparian revegetation:

- Money pays local restoration contractors
- Farmers get annual lease payments
- Restoration = 20 jobs per \$1 million spent
- Facility achieves compliance





# Transaction Process





# Prioritization, Design & Contracting



- Program design and site prioritization
  - Local & ecological priorities
- Contracting leases with public & private owners
- Site design based on reference conditions, quality standards & best professional judgement



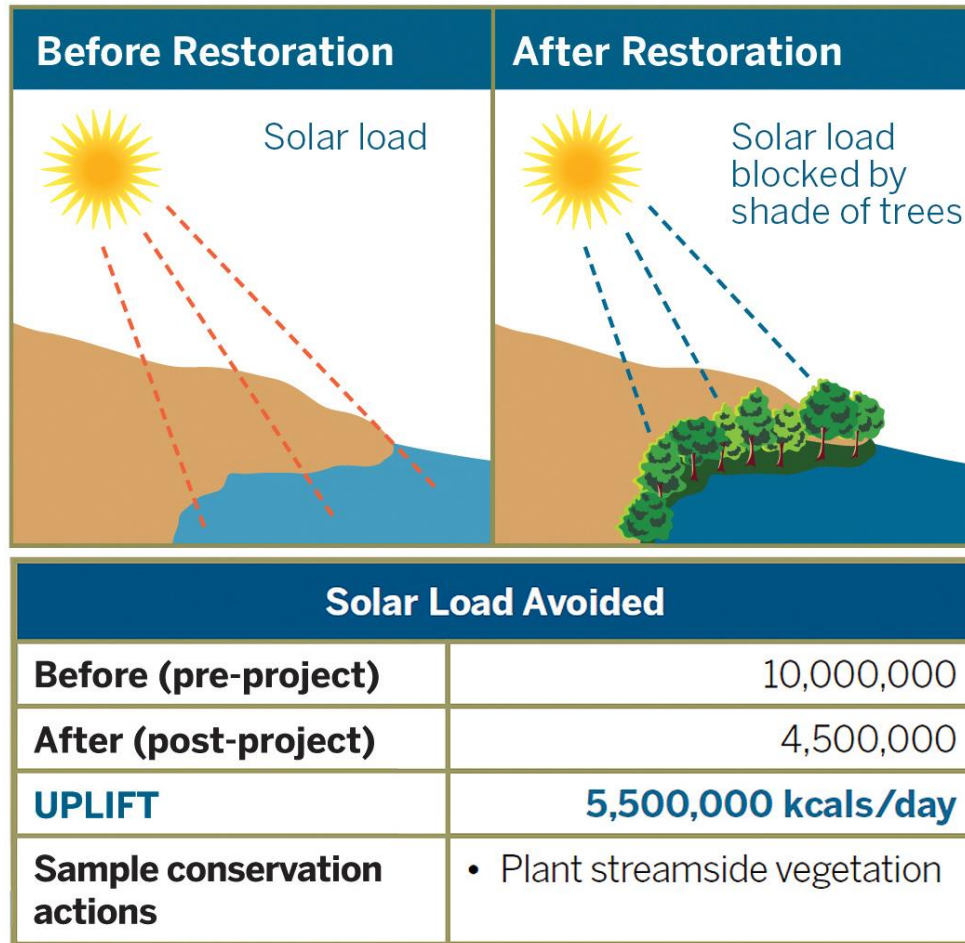


# Riparian Planting





# Measurement Model



- Solar radiation is measured pre and post project implementation
- Reductions in solar radiation are the result of increased canopy cover for riparian re-vegetation or reduced channel surface area in channel modification projects
- **This is called 'Uplift'**



# Monitoring: Performance & Transparency

Back Home Point 1 Event Detail Protocols

Little Butte RM 0.5 > Phase 1

Camera Point/Waypoint	Point 1
Bank	Left
Latitude/Longitude	44, 123
GPS Unit Type	Trimble
Physical Marker	Rebar
Notes	Camera point 1 captures the upstream end of the project site.

Photo Point	Direction /Azimuth	Previous Photo	New Photo
A	Downstream 12°		

View/Edit

## Long-term monitoring:

- Plant survival
- Species diversity
- Invasive species cover
- Photo point monitoring

## Ongoing maintenance:

- Invasive species control
- Plant replacement
- Irrigation where necessary





# Verification & Registration



markit

Financial Information Services

Registry - Public View

Clear Search:  Registry: COTE: Willamette: Water Quality (Temperature) Standard All Units Page 1

Account Holders	Projects	Issuances / Listings	Holdings	Retired Credits					
Name	Category	Standard Name	Project Type	Status	Certification	Validator	Developer	Location	Documents
Oales Creek	Water Quality	COTE: Willamette: Water Quality (Temperature) Standard	Temperature	Active		Willamette Partnership	Oregon Department of Forestry	United States, Oregon	View
	Biodiversity and Habitat	COTE: Willamette: Salmonid Standard	Salmonid Habitat Protection	Active		Willamette Partnership			
Half Mile Lane	Water Quality	COTE: Willamette: Water Quality (Temperature) Standard	Temperature	Active		Willamette Partnership	Oregon Department of State Lands	United States, Oregon	View
	Biodiversity and Habitat	Oregon Wetlands Regulatory (Ratios) Standard	Freshwater Wetland	Active		Willamette Partnership			
	Biodiversity and Habitat	COTE: Willamette: Wetland Habitat Standard	Freshwater Wetland	Active		Willamette Partnership			
	Biodiversity and Habitat	COTE: Willamette: Salmonid Standard	Salmonid Habitat Protection	Active		Willamette Partnership			
	Biodiversity and Habitat	COTE: Willamette: Wetland Habitat Standard	Freshwater Wetland	Active		Willamette Partnership			
	Biodiversity and Habitat	Oregon Wetlands Regulatory (Ratios) Standard	Freshwater Wetland	Active		Willamette Partnership			
	Biodiversity and Habitat	Oregon Wetlands Regulatory (Ratios) Standard	Freshwater Wetland	Active		Willamette Partnership			
	Biodiversity and Habitat	Oregon Wetlands Regulatory (Ratios) Standard	Freshwater Wetland	Active		Willamette Partnership			
Mohawk River Riparian Enhancement Project	Biodiversity and Habitat	COTE: Willamette: Salmonid Standard	Salmonid Habitat Protection	Active		Willamette Partnership	The Freshwater Trust	United States, Oregon	View
	Water Quality	COTE: Willamette: Water Quality (Temperature) Standard	Temperature	Active		Willamette Partnership			

Please note

Registry - Project Details

Sprague RM 43.5(D: 10300000007985)

Account Holder: The Freshwater Trust

Description: The Freshwater Trust partnered with Karath Beck, Riparian Trust to install fast a mile of freshwater wetlands along the north bank of the Sprague River in the lower Klamath Lake drainage in Klamath County, Oregon. The buying project was designed to restore riparian habitat, improve water quality, and provide wildlife habitat for five years. The site will generate phosphorus credits by removing cattle from the Sprague River. The riparian Trust installed phosphorus credits using the Riparian Trust's 1st series 2014. Riparian Trust's priority is to provide an increase in native plant vigor and reductions in bank erosion.

Documents:

- (COTEWQTY) Verification Report (29 Oct 2014-29 Oct 2014)
- (COTEWQTY) FOD - Appendix (29 Oct 2014-29 Oct 2014)
- (COTEWQTY) Project Plan (29 Oct 2014-29 Oct 2014)
- (COTEWQTY) Service Area (Image) (29 Oct 2014-29 Oct 2014)
- (COTEWQTY) Validator Report (29 Oct 2014-29 Oct 2014)
- (COTEWQTY) Wetlands Report (29 Oct 2014-29 Oct 2014)

Category: Standard: COTE: Willamette: Water Quality (Temperature) Standard Project Type: Riparian Additional Certification: Limited Limited: No

Change Linked Status