

## StreamBank Accounting Pilot Project

During the summer of 2008 Parametrix applied its EcoMetrix environmental credit calculation software to four restoration projects measuring the ecological gains they produced. The four projects were all completed with the assistance of Oregon Trout's StreamBank portal. The initial measurements of each project's ecological gains were calculated in a unit of currency meant to represent an overall index of ecosystem services (*functional acres*). After these baseline measurements were established and the project work was completed, EcoMetrix then calculated the uplift delivered by comparing that baseline to the new restored value.

Stream	3 <sup>rd</sup> field basin	Area	Baseline*	Restored*	Total credits*
<b>Lousignont</b>	North Coast	17.1 acres	317 fa	326 fa	9 fa (+3%)
<b>Owens</b>	Willamette	2.7 acres	36 fa	41 fa	5 fa (+14%)
<b>Winchuck</b>	South Coast	39.8 acres	301 fa	315 fa	14 fa (+5%)
<b>Holcomb</b>	Willamette	.22 acres	2 fa	4 fa	2 fa (+100%)

\*Credit currency calculated in functional acres (*fa*)

In addition to calculating the overall change in ecosystem services delivered by these projects, EcoMetrix was also used to generate a metric showing the change in stream functions with a particular emphasis on salmon habitat. Due in large part to the value associated with removing connectivity barriers, Parametrix used a different unit of currency for this calculation, *weighted linear feet*.

Stream	3 <sup>rd</sup> field basin	Stream length	Baseline*	Restored*	Total credits*
<b>Lousignont</b>	North Coast	3,000 linear ft	1,651 wlf	1,780 wlf	129 wlf (+8%)
<b>Owens</b>	Willamette	2600 linear ft	929 wlf	1,100 wlf	171 wlf (+18%)
<b>Winchuck</b>	South Coast	4,430 linear ft	671 wlf	1,291 wlf	620 wlf (+92%)
<b>Holcomb</b>	Willamette	1,665 linear ft	19 wlf	958 wlf	938 wlf (+490%)

\*Credit currency calculated in weighted linear feet (*wlf*)

The weighted linear feet units were calculated using indicators collected for six distinct stream functions: aquatic connectivity, aquatic cover, soil stability, habitat formation, streambed stability, and temperature regulation. The scoring illustrates how well a stream segment is functioning in relation to an optimal state – i.e., a site's weighted linear feet score is a percentage of the total linear feet of that segment. The results, using this new scoring, show that greater credit is given to projects that expanded the unobstructed reach of a stream. Both the **Holcomb** and **Winchuck** projects benefited from this new scoring, as they removed barriers that opened up 1,585 and 1,500 linear feet, respectively.

In each case, StreamBank projects generated a gain in ecological functions though all of them had more room for improvement. The **Lousignont** Creek site started with the highest rated ecosystem services delivery capability at 55%. Though the project increased that rating to almost 60% – best among all four projects – the total number of credits it delivered was the lowest of all four projects. This was due to the fact that it was already operating at such a high functional level. The **Winchuck** project, on the other hand, delivered five times more credits than Lousignont even though its 29% functional rating shows that it is far from “fixed.”

## Project Example: Winchuck

The screenshot shows the EcoMetrix software interface. At the top, the logo 'EcoMetrix™' is on the left, and 'Measuring Ecosystem Services' is on the right. Below the logo is a 'TUTORIAL' button. The main header reads 'Restoration Johnson-Demartin Ranch'. On the left is a navigation menu with categories: 'EcoMetrix Tutorial', 'Restoration Projects' (with sub-links 'My Projects', 'Add a Project', 'View Reports'), 'Development Projects' (with sub-links 'My Projects', 'Add a Project', 'View Reports'), 'Credit/Debit Portfolio' (with sub-links 'My Projects', 'Add a Project', 'View Reports'), and 'Credit Registry'. The central area is an aerial map from Google Earth showing a stream restoration project outlined in red. On the right, a 'DESIGN ALTERNATIVES SHOW' panel displays 'Alt 1' with the following details:

TITLE	Johnson-Demartin
LOCATION	
STATE	COUNTY
OR	Curry

Below the table are links: 'View / Edit this Design Alternative | S to Verifier | Clone Baseline Data'. A 'FUNCTIONAL CHANGE SUMMARY' panel shows:

- Stream (Linear Feet) +
- Ecosystem Service (Functional A) +
- Wetlands (Acres) +

### Baseline Calculation

Baseline Length (lin ft)	2,930
Functional services	23%
Baseline total	671

### Project Work

Reconnected length (lin ft)	1,500
New total length	4,430
Functional services	29%
Restored total	1,291
<b>Credits generated</b>	<b>620</b>

The EcoMetrix project above shows a total a gain of 620 “weighted linear feet”. This representation of ecological uplift in a standard currency will help Oregon Trout in site selection and in reporting back to its funding sources. Once these “stream credits” are verified and registered, they represent a potential offset for other projects that negatively impact the ecosystem services provided by the Winchuck stream. These offsets could be sold to permit applicants or to those needing to satisfy enforcement actions.

EcoMetrix also generated a calculation of ecological gain in “functional acres”. This unit of measure is intended to allow for comparisons between different types of ecologically positive restorations or negative construction projects. The 14 functional acres generated by the Winchuck stream restoration could be applied to an overall ecosystem services footprint as a counterbalance to debits created by other actions.