

To: Selected Portland Harbor Superfund Site Stakeholders

From: John Marshall – Concerned Portland Citizen

Re: Concerns About Portland Harbor Mitigation and Conservation Bank Credit and Debit Currency (DSAYs) on Overall Recovery of Habitat Losses from Superfund Related Pollution

There is good reason to question the illogical arithmetic used to calculate the present value or amount of DSAYs at the Portland Harbor Mitigation and Conservation Banks. The amount of credit allotted to recovery is balanced against the amount of damage the credits are intended to offset. In Portland Harbor they are intended to compensate for the adverse effects of over a century of disposal of materials so toxic and hazardous that they have led to the Portland Harbor being regulated as a Superfund site.

When compared to the amount of credits allotted to all other mitigation and conservation bank sites in the State of Oregon, acre-for-acre the Portland Harbor sites range somewhere in the neighborhood of having ten to twenty times more allotted credits. As a retired U.S. Fish and Wildlife Service mitigation and conservation bank Interagency Review Team member, one of my first thoughts is how this disparity might influence other potential bank sponsors around the State to demand similar credit allotments for their banks and then how that may change the sustainability of the State's mitigation and conservation banking program overall. These banks are used as a tool to offset adverse impacts on the environment by the regulated public. The regulated public is concerned that the cost of credits used to compensate for their debits does not exceed their allowances for meeting their business constraints. Meanwhile, the natural resource agencies are mindful that the mitigation and conservation transactions must be adequate to offset the environmental damages they are targeted against. The only way for that to work is to make sure the effective mitigation ratios are adequate to off-set both acreage and functional environmental losses. This essentially means that the same methods to estimate credit must also be used to estimate debit.

Because of the nascent state of environmental functional assessment, generally regulators invoke a precautionary principle so that no less than a 1:1 compensatory mitigation ratio on acreage is applied to each transaction. For all transactions in Oregon other than those slated at Portland Harbor, this has been assured by using mitigation credit dividers with a minimum of one and a maximum of ten.¹ All debits are tallied with a multiplier value of one, so if the mitigation divider is one the replacement ratio is 1:1. If the mitigation divider is three the replacement ratio is 3:1. And if the mitigation divider is ten then the replacement ratio is 10:1. But at the Portland Harbor banks the mitigation dividers are much less than 1 (see Figure 1). So, in order to preserve the precautionary principle the debits must be tallied using multipliers considerably larger than 1, ranging between 9 to 18-times greater than 1 (see Figure 2). The overarching

¹ Both enhancement and preservation have mitigation dividers of three and ten respectively, but there is 100% loss of wetland acreage in both transaction cases.

Worksheet for Testing Multiple Development Debit and Compensatory Mitigation Credit Transactions

To determine net mitigation credit remaining and its credit dollar value from a debit/credit transaction, enter and select the information requested in each of the data entry boxes below and press the calculate buttons. Note: You are free to deviate from the drop-down options if your particular circumstances warrant it. If you want to derive the total credits available and their value for a newly established mitigation bank, make sure to enter 0-acres into the development acres input boxes. If there are any transactions that are not going to be used to generate credits or debits, enter 0 in their mitigation acres and 0 in their development acres data input boxes. Note: All transaction table buttons must be selected at least once to allow all the calculated data input query boxes to be populated and to subsequently allow a calculation of the sum statistics and for total credits remaining and their dollar values. This worksheet will be updated to accommodate any new information as it becomes available. Finally, it is important to understand that once credits have been calculated for a given mitigation bank, they are stored as a collective array of credits disassociated with the specific acreage that generated them. Therefore, credits to off-set debits are withdrawn from the entire bank, not a specific acreage or mitigation type. Finally, it is also worth noting if you enter data from some of the existing operational bank ledgers and derive different outcomes than reported in the ledgers, there are several possible explanations. For example, data entry errors can lead to different outcome results. Other factors may also include but are not necessarily limited to: 1. the number of decimal places used in data entry, 2. undocumented Chair approved changes in the final mitigation acreage calculations, 3. ledger and / or report duplication errors, 4. authorized mitigation activity omission errors, etc. The final responsibilities and authorities over mitigation bank credit allotment, tracking, and transparent reporting are relegated to the mitigation bank Chairs.

Compensatory Mitigation Action 1		Compensatory Mitigation Action 2		Compensatory Mitigation Action 3		Compensatory Mitigation Action 4		Compensatory Mitigation Action 5		Compensatory Mitigation Action 6		Sum Credits			
Development Acres:	734.2100000004529	Development Acres:	502.51000000009515	Development Acres:	586.5000000000442	Development Acres:	320.7000000000784	Development Acres:	0	Development Acres:	0	Sum of Total Credits Required	2143.92		
Mitigation Acres:	55.43	Mitigation Acres:	27.83	Mitigation Acres:	54.00	Mitigation Acres:	34.156	Mitigation Acres:	0	Mitigation Acres:	0	Sum of Total Credits Cost	160794000.00		
Development Multiplier:	1.00 Low	Development Multiplier:	1.00 Low	Development Multiplier:	1.00 Low	Development Multiplier:	1.00 Low	Development Multiplier:	1.00 Low	Development Multiplier:	1.00 Low	Total Remaining Credits Available:	0.00		
Mitigation Divider:	0.0754961114667 Restoration	Mitigation Divider:	0.0553819824481 Restoration	Mitigation Divider:	0.09207161125319 Restoration	Mitigation Divider:	0.1065045213595 Restoration	Mitigation Divider:	1.00 Restoration	Mitigation Divider:	1.00 Restoration	Total Remaining Credit Value:	0.00		
Price Per Credit:	75000.00	Price Per Credit:	75000.00	Price Per Credit:	75000.00	Price Per Credit:	75000.00	Price Per Credit:	75000.00	Price Per Credit:	75000.00	Sum Credits			
Number of Credits Required:	734.2100000004529	Number of Credits Required:	502.51000000009515	Number of Credits Required:	586.5000000000442	Number of Credits Required:	320.7000000000784	Number of Credits Required:	0	Number of Credits Required:	0				
Total Credit Cost:	55065750.00003397	Total Credit Cost:	37688250.00000714	Total Credit Cost:	43987500.000003316	Total Credit Cost:	24052500.00000588	Total Credit Cost:	0	Total Credit Cost:	0				
Remaining Credits Available:	0	Remaining Credits Available:	0	Remaining Credits Available:	0	Remaining Credits Available:	0	Remaining Credits Available:	0	Remaining Credits Available:	0				
Remaining Credit Value:	0	Remaining Credit Value:	0	Remaining Credit Value:	0	Remaining Credit Value:	0	Remaining Credit Value:	0	Remaining Credit Value:	0				
Calculate Credits		Calculate Credits		Calculate Credits		Calculate Credits		Calculate Credits		Calculate Credits					

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Author: John Marshall

Figure 1. About 171-acres of habitat recovery in exchange for 2,144-acres of habitat loss marketed at a value of \$160,794,000.00.²

²Assumes credits and debits are valued at \$75,000.00.

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Mitigation Acres:	55.43	Mitigation Acres:	27.83	Mitigation Acres:	54.00	Mitigation Acres:	34.156	Mitigation Acres:	0	Mitigation Acres:	0	Sum of Total Credits Cost:	160794000.00	
Development Multiplier:	13.2457153166155511455 Low	Development Multiplier:	18.0564139417894358605 Low	Development Multiplier:	10.861111111111111111111111 Low	Development Multiplier:	9.38927274856540578522 Low	Development Multiplier:	1.00 Low	Development Multiplier:	1.00 Low	Total Remaining Credits Available:	0.00	
Mitigation Divider:	0.07549611146674657114 Restoration	Mitigation Divider:	0.05538198244811048536 Restoration	Mitigation Divider:	0.09207161125319693094 Restoration	Mitigation Divider:	0.10650452135952603679 Restoration	Mitigation Divider:	1.00 Restoration	Mitigation Divider:	1.00 Restoration	Total Remaining Credit Value:	0.00	
Price Per Credit:	75000.00	Price Per Credit:	75000.00	Price Per Credit:	75000.00	Price Per Credit:	75000.00	Price Per Credit:	75000.00	Price Per Credit:	75000.00	Sum Credits		
Number of Credits Required:	734.2099999999999	Number of Credits Required:	502.51	Number of Credits Required:	586.5	Number of Credits Required:	320.7	Number of Credits Required:	0	Number of Credits Required:	0	Calculate Credits		
Total Credit Cost:	55065749.99999999	Total Credit Cost:	37688250	Total Credit Cost:	43987500	Total Credit Cost:	24052500	Total Credit Cost:	0	Total Credit Cost:	0	Reset		
Remaining Credits Available:	0	Remaining Credits Available:	0	Remaining Credits Available:	0	Remaining Credits Available:	0	Remaining Credits Available:	0	Remaining Credits Available:	0	Author: John Marshall		
Remaining Credit Value:	0	Remaining Credit Value:	0	Remaining Credit Value:	0	Remaining Credit Value:	0	Remaining Credit Value:	0	Remaining Credit Value:	0			

Figure 2. About 171-acres of habitat recovery in exchange for 171-acres of habitat loss marketed at a value of \$160,794,000.00.³

³ Assumes credits and debits are valued at \$ 75,000.00.

effect is the regulated public must spend between 9 to 18 times as much to offset the same acreage of impact as they have become accustomed to in similar transactions. That situation leaves one to suspect the regulated public will push back on the regulators and possibly even demand the regulators ease off on their perceived unfair burden, which could conceivably influence the regulators to capitulate over the objections of the natural resource agencies and to adjust their compensatory debit multipliers lower and closer to 1 or entirely back to 1. The net effect of this would be to set into motion a replacement strategy of less than 1:1 for natural resource damages in Portland Harbor, possibly considerably less than 1:1.

As a former U.S. Fish and Wildlife Service representative, I would prefer to not be forced to deal with a situation where the mitigation and conservation bank credits and debits (DSAYs) are assessed at such high numbers. I think the arithmetic logic which yields these inflated numbers is at best suspect (see <https://www.mitigationcreditdebit.com/DSAYsAnalyzed.pdf>). But, if I am left with no other choice than to go down that rabbit hole, then as a citizen of Portland concerned about the Portland Harbor clean-up effort, I would prefer an alternative at least as conservative as a 1:1 credit to debit ratio (>1:1 would be even better) holding true to a precautionary principle as illustrated in Figure 2. I would be vehemently opposed to any transactional scheme that invokes credit / debit transactions similar to those illustrated in Figure 1. Of course, the only way to know for sure is through transparent accessible accounting. The debit acreages and geographic coordinates should be tracked, recorded, and reported in a common database accessible both to the members of the Trustee Council with oversight authority and to Portland Harbor stakeholders.

A handwritten signature in black ink that reads "John Marshall". The signature is written in a cursive, flowing style with a long horizontal line extending to the right.

Concerned Citizen of Portland