

**Supplementary Information Tables for *Efficiency of incentives to jointly increase carbon sequestration and species conservation on a landscape***

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**SI Table 1: Average Annual Truncated Willingness-to-Accept (WTA) a Conservation Contract per Acre by Initial Land-Use Type Across all Private Parcels Eligible for a Conservation Contract Under the *All* Scenario**

<b>Initial Land-Use</b>	<b>Average Annual Truncated WTA per Acre</b>
Orchard/Vineyard ( <i>i</i> = 1)	\$190
Grass Seed ( <i>i</i> = 2)	\$219
Row Crops ( <i>i</i> = 4)	\$209
Managed Forestry ( <i>i</i> = 5)	\$245
Old Growth Conifer ( <i>i</i> = 9)	\$239
Mixed Forest ( <i>i</i> = 10)	\$230
Oak and Other Hardwood ( <i>i</i> = 11)	\$247
Riparian Forest ( <i>i</i> = 12)	\$285
Emergent Marsh ( <i>i</i> = 13)	\$230
Scrub/Shrub ( <i>i</i> = 14)	\$298
<b>Total</b>	<b>\$229</b>

Notes: An annual WTA per acre value was simulated for each eligible parcels 500 times. An annual WTA per acre value equal to or greater than \$400 was not included in the average calculation presented above.

**SI Table 2: Annual per Acre Conservation Contract Prices**

<b>Policy Scenario</b>	<b>Annual Conservation Budget</b>		
	<b>\$1 Million</b>	<b>\$5 Million</b>	<b>\$10 Million</b>
<i>All</i>	\$25	\$54	\$72
<i>Rare Habitat</i>	\$55	\$118	\$162
<i>Carbon</i>	\$45	\$85	\$112.5
<i>Riparian</i>	\$37	\$77	\$112
<i>Species Conservation</i>	\$58	\$135	\$188

**SI Table 3: Carbon Stock Values (Metric Tons per Hectare) for Each Land-Use  $i, k$  and Age Class  $a, b$  in the Simple Carbon Sequestration Model**

Land-Use	$a, b$	$C_{i_a}, C_{k_b}$		Land-Use	$a, b$	$C_{i_a}, C_{k_b}$	
		Low Value	High Value			Low Value	High Value
$i, k = 1$	1	45	362	$i, k = 10$	1	110	384
$i, k = 2$	1	64	121		2	364	639
$i, k = 3$	1, 2	90	116		3	573	809
	3	91	120	$i, k = 11$	1	106	343
$i, k = 4$	1	48	75		2	334	568
$i, k = 5$	1	130	411		3	521	717
$i, k = 6$	1	50	98	$i, k = 12$	1	110	384
$i, k = 7$	1, 2	12	196		2	364	639
	3	46	324		3	573	809
$i, k = 8$	1, 2	89	97	$i, k = 13$	1	2	298
	3	91	106	$i, k = 14$	1, 2	11	123
$i, k = 9$	1	487	893		3	32	493
	2	681	1044				
	3	805	1236				

**Notes:** If  $C_{i_a}$  or  $C_{k_b}$  are not given for some  $i_a$  or  $k_b$  than the value is 0 for that  $i_a$  or  $k_b$ . These values include carbon in soil, belowground biomass, aboveground biomass, deadwood, and ground litter. Orchard/Vineyard ( $i, k = 1$ ); Grass Seed ( $i, k = 2$ ); Pasture ( $i, k = 3$ ); Row Crops ( $i, k = 4$ ); Managed Forestry ( $i, k = 5$ ); Rural-Residential Housing ( $i, k = 6$ ); Oak Savanna ( $i, k = 7$ ); Prairie ( $i, k = 8$ ); Old Growth Conifer ( $i, k = 9$ ); Mixed Forest ( $i, k = 10$ ); Oak and Other Hardwood ( $i, k = 11$ ); Riparian Forest ( $i, k = 12$ ); Emergent Marsh ( $i, k = 13$ ); and Scrub/Shrub ( $i, k = 14$ ).

**SI Table 4: Carbon Stored in Harvested Wood Product (Metric Tons per Hectare) for Each Land-Use  $i, k$  and Age Class  $a, b$  in the Simple Carbon Sequestration Model**

Land-Use	$a, b$	$HWP_i, HWP_k$ Low Value	$HWP_i, HWP_k$ High Value
$i, k = 5$	1	8	621
		$CCHWP_{i_a}$ Low Value	$CCHWP_{i_a}$ High Value
$i = 9$	1	0.01900	0.05400
	2	0.02800	0.06500
	3	0.03400	0.07900
$i = 10$	1	0.00058	0.02565
	2	0.01462	0.03421
	3	0.01949	0.04561
$i = 11$	1	0.00045	0.01973
	2	0.01124	0.02631
	3	0.01499	0.03508
$i = 12$	1	0.00058	0.02565
	2	0.01462	0.03421
	3	0.01949	0.04561

**Notes:** If  $HWP_i, HWP_k$ , and  $CCHWP_{i_a}$  are not given for some  $i_a$  or  $k_b$  than the value is 0 for that  $i_a$  or  $k_b$ . Managed Forestry ( $i, k = 5$ ); Old Growth Conifer ( $i, k = 9$ ); Mixed Forest ( $i, k = 10$ ); Oak and Other Hardwood ( $i, k = 11$ ); Riparian Forest ( $i, k = 12$ ).

**SI Table 5:  $\alpha_{i_a k_b T}$  for Each Land-Use  $i, k$  in the Simple Carbon Sequestration Model**

Land-Use	$a$	$\alpha_{i_a k_b T} = 1$ with the following $k_b$	$\alpha_{i_a k_b T} = 0.6$ with the following $k_b$
$i, k = 1$	1	1 - 8 (1); 10 - 14 (1)	9 (1)
$i, k = 2$	1	1 - 8 (1); 10 - 14 (1)	9 (1)
$i, k = 3$	1, 2	1 - 2 (1); 3 (3); 4 - 6 (1); 7 - 8 (3); 10 - 14 (1)	9 (1)
	3	1 - 2 (1); 3 (3); 4 - 6 (1); 7 - 8 (3); 10 - 14 (1)	9 (1)
$i, k = 4$	1	1 - 8 (1); 10 - 14 (1)	9 (1)
$i, k = 5$	1	1 - 8 (1); 10 - 14 (1)	9 (1)
$i, k = 6$	1	1 - 8 (1); 10 - 14 (1)	9 (1)
$i, k = 7$	1, 2	1 - 2 (1); 3 (3); 4 - 6 (1); 7 - 8 (3); 10 - 12 (2); 13 - 14 (1)	9 (1)
	3	1 - 2 (1); 3 (3); 4 - 6 (1); 7 - 8 (3); 10 - 12 (3); 13 - 14 (1)	9 (1)
$i, k = 8$	1, 2	1 - 2 (1); 3 (3); 4 - 6 (1); 7 - 8 (3); 10 - 14 (1)	9 (1)
	3	1 - 2 (1); 3 (3); 4 - 6 (1); 7 - 8 (3); 10 - 14 (1)	9 (1)
$i, k = 9$	1	1 - 8 (1); 9 - 10 (2); 11 (1); 12 (2); 14 - 15 (1)	NA
	2	1 - 8 (1); 9 - 10 (3); 11 (1); 12 (3); 13 - 14 (1)	NA
	3	1 - 8 (1); 9 - 10 (3); 11 (1); 12 (3); 13 - 14 (1)	NA
$i, k = 10$	1	1 - 8 (1); 9 - 12 (2); 13 - 14 (1)	NA
	2	1 - 8 (1); 9 - 12 (3); 13 - 14 (1)	NA
	3	1 - 8 (1); 9 - 12 (3); 13 - 14 (1)	NA
$i, k = 11$	1	1 - 6 (1); 7 (3) 8 - 9 (1); 10 - 12 (2); 13 - 14 (1)	NA
	2	1 - 6 (1); 7 (3) 8 - 9 (1); 10 - 12 (2); 13 - 14 (1)	NA
	3	1 - 6 (1); 7 (3) 8 - 9 (1); 10 - 12 (2); 13 - 14 (1)	NA
$i, k = 12$	1	1 - 6 (1); 7 (3); 8 (1); 9 - 12 (2); 13 - 14 (1)	NA
	2	1 - 6 (1); 7 (3); 8 (1); 9 - 12 (3); 13 - 14 (1)	NA
	3	1 - 6 (1); 7 (3); 8 (1); 9 - 12 (3); 13 - 14 (1)	NA
$i, k = 13$	1	1 - 14 (1)	NA
$i, k = 14$	1, 2	1 - 13 (1); 14 (2)	NA
	3	1 - 13 (1); 14 (2)	NA

**Notes:** The number in parentheses indicates the subscript  $b$  that takes on the given value.  $\alpha_{i_a k_b T} = 0$  for all  $k_b$  not indicated.

Orchard/Vineyard ( $i, k = 1$ ); Grass Seed ( $i, k = 2$ ); Pasture ( $i, k = 3$ ); Row Crops ( $i, k = 4$ ); Managed Forestry ( $i, k = 5$ ); Rural-Residential Housing ( $i, k = 6$ ); Oak Savanna ( $i, k = 7$ ); Prairie ( $i, k = 8$ ); Old Growth Conifer ( $i, k = 9$ ); Mixed Forest ( $i, k = 10$ ); Oak and Other Hardwood ( $i, k = 11$ ); Riparian Forest ( $i, k = 12$ ); Emergent Marsh ( $i, k = 13$ ); and Scrub/Shrub ( $i, k = 14$ ).

**SI Table 6:  $\beta_{ikT}$  for Each Land-Use  $i, k$  in the Simple Carbon Sequestration Model**

<b>Land-Use</b>	<b><math>a</math></b>	<b><math>\beta_{ikT} = 1</math> with the following <math>k</math></b>	<b><math>\beta_{ikT} = 0.5</math> with the following <math>k</math></b>
$i = 5$	1	5	1 - 4; 6 - 14
$i, k = 9$	1	5	NA
	2	5	NA
	3	5	NA
$i, k = 10$	1	5	NA
	2	5	NA
	3	5	NA
$i, k = 11$	1	NA	5
	2	NA	5
	3	NA	5
$i, k = 12$	1	NA	5
	2	NA	5
	3	NA	5

**Notes:**  $\beta_{ikT} = 0$  for all  $k$  not indicated. Managed Forestry ( $i, k = 5$ ); Old Growth Conifer ( $i, k = 9$ ); Mixed Forest ( $i, k = 10$ ); Oak and Other Hardwood ( $i, k = 11$ ); and Riparian Forest ( $i, k = 12$ ).

**SI Table 7:  $\gamma_{ikT}$  for Each Land-Use  $i, k$  in the Simple Carbon Sequestration Model**

Land-Use	$a$	$\gamma_{ikT} = 1$ with the following $k$
$i, k = 9$	1	1 - 4; 13 - 14
	2	1 - 4; 13 - 14
	3	1 - 4; 13 - 14
$i, k = 10$	1	1 - 4; 13 - 14
	2	1 - 4; 13 - 14
	3	1 - 4; 13 - 14
$i, k = 11$	1	1 - 4; 13 - 14
	2	1 - 4; 13 - 14
	3	1 - 4; 13 - 14
$i, k = 12$	1	1 - 4; 13 - 14
	2	1 - 4; 13 - 14
	3	1 - 4; 13 - 14

**Notes:**  $\gamma_{ikT} = 0$  for all  $k$  not indicated. Old Growth Conifer ( $i, k = 9$ ); Mixed Forest ( $i, k = 10$ ); Oak and Other Hardwood ( $i, k = 11$ ); and Riparian Forest ( $i, k = 12$ ).

**SI Table 8:  $\delta_{ikT}$  for Each Land Use  $i, k$  in the Simple Carbon Sequestration Model**

<b>Land Use Type</b>	<b><math>a</math></b>	<b><math>\delta_{ikT} = 1</math> with the following <math>k</math></b>
$i = 5$	1	5

Notes:  $\delta_{ikT} = 0$  for all  $i, k$  not indicated. Managed Forestry ( $i, k = 5$ ).

**SI Table 9: Sub-Land-Use Categories in the Complex Carbon Sequestration Model**

Land-Use <i>i</i>	Sub-Land-Use <i>d</i>	Sub-Land-Use Name	Land-Use <i>i</i>	Sub-Land-Use <i>d</i>	Sub-Land Use Name
1	1	Orchard – Low Quality Soil	7	24	Oak Savanna
1	2	Orchard – High Quality Soil	8	25	Prairie – Low Quality Soil
2	3	Grass Seed – Low Quality Soil	8	26	Prairie – High Quality Soil
2	4	Grass Seed – High Quality Soil	8	27	Meadow – Low Quality Soil
3	5	Pasture – Low Quality Soil	8	28	Meadow – High Quality Soil
3	6	Pasture – High Quality Soil	9	29	FCC > 200 YRS
4	7	Row crops – Low Quality Soil	9	30	FCC 81-200 YRS
4	8	Row crops – High Quality Soil	10	31	FCC 21-40 YRS
5	9	Managed Forestry – Conifer Forest	10	32	FCC 41-80 YRS
5	10	Managed Forestry – Mixed Forest	10	33	Mixed Open Forest - Deciduous
6	11	Rural-Residential – Deciduous Closed, Mixed Closed Forest	10	34	Mixed Open Forest - Conifer
6	12	Rural-Residential – Meadow	10	35	Mixed Closed Forest – Deciduous
6	13	Rural-Residential – Scrub-Shrub, shrub	10	36	Mixed Closed Forest - Conifer
6	14	Rural-Residential – FCC 81-200 YRS	11	37	Oak and Other Hardwood
6	15	Rural-Residential – Shrub Riparian	12	38	Riparian Forest
6	16	Rural-Residential – FCC 41-60,61-80 YRS, Conifer Closed, Conifer Open	13	39	Emergent Marsh
6	17	Rural-Residential – Riparian Forest	14	40	Shrub/scrub – Riparian Open
6	18	Rural-Residential – Oak Hardwood	14	41	Scrub/Shrub – Shrub
6	19	Rural-Residential – Deciduous Open, Mixed Open Forest	14	42	Shrub/scrub – Shrub Riparian
6	20	Rural-Residential – Emergent Marsh	14	43	Shrub/scrub – Bare ground, barren
6	21	Rural-Residential – Riparian Open			
6	22	Rural-Residential – Bare Ground, Barren			
6	23	Rural-Residential – Native Grass			

**SI Table 10: Mapping Land-Use *i* to Sub-Land-Use *d* in the Complex Carbon Sequestration Model**

Land-Use <i>i</i>	Sub-Land-Use <i>d</i>	Rules for <i>i</i> to <i>d</i> Mapping	Land-Use <i>i</i>	Sub-Land-Use <i>d</i>	Rules for <i>i</i> to <i>d</i> Mapping
1	1	If <i>i</i> = 1 and <i>soil</i> = 0	7	24	If <i>i</i> = 7
1	2	If <i>i</i> = 1 and <i>soil</i> = 1	8	25	If <i>i</i> = 8 and <i>j</i> = Native Grass on ORNHIC (2000) and <i>soil</i> = 0
2	3	If <i>i</i> = 2 and <i>soil</i> = 0	8	26	If <i>i</i> = 8 and <i>j</i> = Native Grass on ORNHIC (2000) and <i>soil</i> = 1
2	4	If <i>i</i> = 2 and <i>soil</i> = 1	8	27	If <i>i</i> = 8 and <i>j</i> = Meadow on ORNHIC (2000) and <i>soil</i> = 0
3	5	If <i>i</i> = 3 and <i>soil</i> = 0	8	28	If <i>i</i> = 8 and <i>j</i> = Meadow on ORNHIC (2000) and <i>soil</i> = 1
3	6	If <i>i</i> = 3 and <i>soil</i> = 1	9	29	If <i>i</i> = 9 and <i>j</i> = FCC > 200 YRS on ORNHIC (2000)
4	7	If <i>i</i> = 4 and <i>soil</i> = 0	9	30	If <i>i</i> = 9 and <i>j</i> = FCC 81-200 YRS on ORNHIC (2000)
4	8	If <i>i</i> = 4 and <i>soil</i> = 1	10	31	If <i>i</i> = 10 and <i>j</i> = FCC 21-40 YRS on ORNHIC (2000)
5	9	If <i>i</i> = 5 and <i>j</i> = Deciduous Forest on ORNHIC (2000)	10	32	If <i>i</i> = 10 and <i>j</i> = FCC 41-80 YRS on ORNHIC (2000)
5	10	If <i>i</i> = 5 and <i>j</i> = Deciduous Closed, Mixed Closed Forest on ORNHIC (2000)	10	33	If <i>i</i> = 10 and <i>j</i> = Mixed Open Forest on ORNHIC (2000)
6	11	If <i>i</i> = 6 <i>j</i> = Deciduous Closed, Mixed Closed Forest on ORNHIC (2000)	10	34	If <i>i</i> = 10 and <i>j</i> = Mixed Open Forest on ORNHIC (2000)
6	12	If <i>i</i> = 6 and <i>j</i> = Meadow on ORNHIC (2000)	10	35	If <i>i</i> = 10 and <i>j</i> = Mixed Open Forest on ORNHIC (2000)
6	13	If <i>i</i> = 6 and <i>j</i> = Scrub-Shrub, shrub on ORNHIC (2000)	10	36	If <i>i</i> = 10 and <i>j</i> = Mixed Open Forest on ORNHIC (2000)
6	14	If <i>i</i> = 6 and <i>j</i> = FCC 81-200 YRS on ORNHIC (2000)	11	37	If <i>i</i> = 11
6	15	If <i>i</i> = 6 and <i>j</i> = Shrub Riparian on ORNHIC (2000)	12	38	If <i>i</i> = 12
6	16	If <i>i</i> = 6 and <i>j</i> = FCC 41-60, 61-80 YRS, Conifer Closed, Conifer Open on ORNHIC (2000)	13	39	If <i>i</i> = 13
6	17	If <i>i</i> = 6 and <i>j</i> = Riparian Forest on ORNHIC (2000)	14	40	If <i>i</i> = 14 and <i>j</i> = Riparian Open on ORNHIC (2000)
6	18	If <i>i</i> = 6 and <i>j</i> = Oak Hardwood on ORNHIC (2000)	14	41	If <i>i</i> = 14 and <i>j</i> = Scrub-Shrub, Shrub on ORNHIC (2000)
6	19	If <i>i</i> = 6 and <i>j</i> = Deciduous Open, Mixed Open Forest on ORNHIC (2000)	14	42	If <i>i</i> = 14 and <i>j</i> = Shrub Riparian on ORNHIC (2000)
6	20	If <i>i</i> = 6 and <i>j</i> = Wetland on ORNHIC (2000)	14	43	If <i>i</i> = 14 and <i>j</i> = Bare Ground, Barren on ORNHIC (2000)
6	21	If <i>i</i> = 6 and <i>j</i> = Riparian Open on ORNHIC (2000)			
6	22	If <i>i</i> = 6 and <i>j</i> = Bare Ground, Barren on ORNHIC (2000)			
6	23	If <i>i</i> = 6 and <i>j</i> = Native Grass on ORNHIC (2000)			

**SI Table 11: The Range of Tree Stand Variable Values for Sub-Land-Use  $d$  in the Complex Carbon Sequestration Model**

Sub-Land-Use $d$	Tree Mix	Tree Age		CC (L / H)	Sub-Land-Use $d$	Tree Mix	Tree Age		CC (L / H)
	<i>SoftW</i> (L / H)	<i>SoftAge</i> (L / H)	<i>HardAge</i> (L / H)			<i>SoftW</i> (L / H)	<i>SoftAge</i> (L / H)	<i>HardAge</i> (L / H)	
1	0 / 0	0 / 0	0 / 0	0 / 0	24	0 / 0.1	30 / 80	30 / 80	0.05 / 0.3
2	0 / 0	0 / 0	0 / 0	0 / 0	25	0.3 / 0.7	10 / 50	10 / 50	0 / 0.3
3	0.2 / 0.8	40	40	0.05 / 0.15	26	0.3 / 0.7	10 / 50	10 / 50	0 / 0.3
4	0.2 / 0.8	40	40	0.05 / 0.15	27	0.3 / 0.7	10 / 50	10 / 50	0.1 / 0.3
5	0 / 0	0 / 0	0 / 0	0 / 0	28	0.3 / 0.7	10 / 50	10 / 50	0.1 / 0.3
6	0 / 0	0 / 0	0 / 0	0 / 0	29	0.95 / 1	200 / 250	200 / 250	0.7 / 0.9
7	0 / 0	0 / 0	0 / 0	0 / 0	30	0.95 / 1	81 / 200	81 / 200	0.7 / 0.9
8	0 / 0	0 / 0	0 / 0	0 / 0	31	0.95 / 1	21 / 40	21 / 40	0.7 / 0.9
9	0.959	Varies	Varies	1	32	0.95 / 1	41 / 41	80 / 80	0.7 / 0.9
10	0.365	Varies	Varies	1	33	0.1 / 0.3	30 / 80	30 / 80	0.3 / 0.7
11	0.1 / 0.3	10 / 80	10 / 80	0.2 / 0.4	34	0.3 / 0.9	30 / 80	30 / 80	0.3 / 0.7
12	0.3 / 0.7	10 / 80	10 / 80	0.05 / 0.2	35	0.1 / 0.3	30 / 80	30 / 80	0.7 / 0.9
13	0.3 / 0.7	10 / 80	10 / 80	0 / 0.1	36	0.3 / 0.9	30 / 80	30 / 80	0.7 / 0.9
14	0.95 / 1	81 / 200	81 / 200	0.2 / 0.4	37	0.1 / 0.4	30 / 80	30 / 80	0.7 / 0.9
15	0.3 / 0.7	10 / 50	10 / 50	0 / 0.1	38	0.3 / 0.7	30 / 80	30 / 80	0.4 / 0.8
16	0.95 / 1	41 / 41	80 / 80	0.1 / 0.3	39	0 / 0	0 / 0	0 / 0	0 / 0
17	0.3 / 0.7	10 / 80	10 / 80	0.1 / 0.3	40	0.3 / 0.7	10 / 50	10 / 50	0 / 0.1
18	0.1 / 0.4	10 / 80	10 / 80	0.15 / 0.3	41	0.3 / 0.7	10 / 50	10 / 50	0 / 0.1
19	0.1 / 0.3	10 / 80	10 / 80	0.1 / 0.3	42	0.3 / 0.7	10 / 50	10 / 50	0 / 0.1
20	0.3 / 0.7	10 / 80	10 / 80	0.05 / 0.2	43	0 / 0	0 / 0	0 / 0	0 / 0
21	0.3 / 0.7	10 / 50	10 / 50	0 / 0.1					
22	0.3 / 0.7	10 / 50	10 / 50	0 / 0.1					
23	0.3 / 0.7	10 / 50	10 / 50	0 / 0.3					

Notes: L = Low Bound and H = High Bound

**SI Table 12: Carbon Stored (Metric Tons per Hectare) in Soil at Equilibrium and Years to Soil Carbon Equilibrium After a Change to Sub-Land-Use *d* in the Complex Carbon Model**

Sub-Land-Use <i>d</i>	SoilMass		SoilEqu		Sub-Land-Use <i>d</i>	SoilMass		SoilEqu		Sub-Land-Use <i>d</i>	SoilMass		SoilEqu	
	L	H	L	H		L	H	L	H		L	H	L	H
<b>1</b>	44.4	62.0	25	25	<b>14</b>	53.6	53.6	25	25	<b>25</b>	78.0	108.9	50	50
<b>2</b>	62.0	86.6	25	25	<b>15</b>	74.9	74.9	25	25	<b>26</b>	108.9	152.1	50	50
<b>3</b>	44.4	62.0	25	25	<b>16</b>	53.6	53.6	25	25	<b>27</b>	78.0	108.9	50	50
<b>4</b>	62.0	86.6	25	25	<b>17</b>	53.6	53.6	25	25	<b>28</b>	108.9	152.1	50	50
<b>5</b>	50.4	70.4	25	25	<b>18</b>	53.6	53.6	25	25	<b>38</b>	97.5	97.5	50	50
<b>6</b>	70.4	98.3	25	25	<b>19</b>	53.6	53.6	25	25	<b>39</b>	120	120	50	50
<b>7</b>	38.4	53.6	25	25	<b>20</b>	74.9	74.9	25	25	<b>40</b>	108.9	108.9	100	100
<b>8</b>	53.6	74.9	25	25	<b>21</b>	74.9	74.9	25	25	<b>41</b>	120.0	120.0	50	50
<b>11</b>	53.6	53.6	25	25	<b>22</b>	53.6	53.6	25	25	<b>42</b>	120.0	120.0	100	100
<b>12</b>	74.9	74.9	25	25	<b>23</b>	74.9	74.9	25	25	<b>43</b>	53.6	53.6	25	25
<b>13</b>	74.9	74.9	25	25	<b>24</b>	108.9	108.9	50	50					

**Notes:** L = Low Bound and H = High Bound. For *d* not listed soil carbon levels are determined using allometric equations from Smith et al. (2006).

**SI Table 13: Carbon Stored (Metric Tons per Hectare) in Non-Tree Root Mass at Equilibrium and Years to Non-Tree Root Mass Carbon Equilibrium After a Change to Sub-Land-Use *d* in the Complex Carbon Model**

Sub-Land-Use <i>d</i>	<i>RootMass</i>		<i>RootEqu</i>		Sub-Land-Use <i>d</i>	<i>RootMass</i>		<i>RootEqu</i>	
	L	H	L	H		L	H	L	H
<b>1</b>	1.7	2.0	25	25	<b>25</b>	9	9	50	50
<b>2</b>	2.0	2.4	25	25	<b>26</b>	9	9	50	50
<b>3</b>	1.7	2.0	25	25	<b>27</b>	9	9	50	50
<b>4</b>	2.0	2.4	25	25	<b>28</b>	9	9	50	50
<b>5</b>	3.4	4.1	25	25	<b>40</b>	26.9	26.9	100	100
<b>6</b>	4.1	4.9	25	25	<b>41</b>	32	32	50	50
					<b>42</b>	32	32	100	100

Notes: L = Low Bound and H = High Bound. For *d* not listed *RootMass* = 0.

**SI Table 14: Mapping Land-Use  $k$  to Sub-Land-Use  $d^*$  in the Complex Carbon Sequestration Model**

Land-Use $k$	Sub-Land-Use $d^*$	Rules for $k$ to $d^*$ Mapping	Land-Use $k$	Sub-Land-Use $d^*$	Rules for $k$ to $d^*$ Mapping
1	1	If $k = 1$ and $soil = 0$	7	24	If $k = 7$
1	2	If $k = 1$ and $soil = 1$	8	25	If $k = 8$ , $d \neq 27$ and $d \neq 28$ , and $soil = 0$
2	3	If $k = 2$ and $soil = 0$	8	26	If $k = 8$ , $d \neq 27$ and $d \neq 28$ , and $soil = 1$
2	4	If $k = 2$ and $soil = 1$	8	27	If $k = 8$ , $d = 27$ or $d = 28$ , and $soil = 0$
3	5	If $k = 3$ and $soil = 0$	8	28	If $k = 8$ , $d = 27$ or $d = 28$ , and $soil = 1$
3	6	If $k = 3$ and $soil = 1$	9	29	If $k = 9$ and $SoftAge + T \geq 200$
4	7	If $k = 4$ and $soil = 0$	9	30	If $k = 9$ and $SoftAge + T < 200$
4	8	If $k = 4$ and $soil = 1$	10	31	If $k = 10$ , $SoftW \geq 0.8$ , and $SoftAge + T \leq 40$
5	9	If $k = 5$ and $HardW \leq 0.2$	10	32	If $k = 10$ , $SoftW \geq 0.8$ , and $SoftAge + T > 40$
5	10	If $k = 5$ and $HardW > 0.2$	10	33	If $k = 10$ , $SoftW < 0.6$ , and $CC < 0.6$
6	11	If $k = 6$ $j =$ Deciduous Closed, Mixed Closed Forest on ORNHIC (2000)	10	34	If $k = 10$ , $SoftW \geq 0.6$ , $SoftW < 0.8$ , and $CC < 0.6$
6	12	If $k = 6$ and $j =$ Meadow on ORNHIC (2000)	10	35	If $k = 10$ , $SoftW < 0.6$ , and $CC \geq 0.6$
6	13	If $k = 6$ and $j =$ Scrub-Shrub, shrub on ORNHIC (2000)	10	36	If $k = 10$ , $SoftW \geq 0.6$ , $SoftW < 0.8$ , and $CC \geq 0.6$
6	14	If $k = 6$ and $j =$ FCC 81-200 YRS on ORNHIC (2000)	11	37	If $k = 11$
6	15	If $k = 6$ and $j =$ Shrub Riparian on ORNHIC (2000)	12	38	If $k = 12$
6	16	If $k = 6$ and $j =$ FCC 41-60, 61-80 YRS, Conifer Closed, Conifer Open on ORNHIC (2000)	13	39	If $k = 13$
6	17	If $k = 6$ and $j =$ Riparian Forest on ORNHIC (2000)	14	40	If $k = 14$ , $riparian = 1$ , and $CC < 0.2$
6	18	If $k = 6$ and $j =$ Oak Hardwood on ORNHIC (2000)	14	41	If $k = 14$ , $riparian = 0$ , and $CC \geq 0.05$
6	19	If $k = 6$ and $j =$ Deciduous Open, Mixed Open Forest on ORNHIC (2000)	14	42	If $k = 14$ , $riparian = 1$ , and $CC \geq 0.2$
6	20	If $k = 6$ and $j =$ Wetland on ORNHIC (2000)	14	43	If $k = 14$ , $riparian = 0$ , and $CC < 0.05$
6	21	If $k = 6$ and $j =$ Riparian Open on ORNHIC (2000)			
6	22	If $k = 6$ and $j =$ Bare Ground, Barren on ORNHIC (2000)			
6	23	If $k = 6$ and $j =$ Native Grass on ORNHIC (2000)			

**SI Table 15:  $C_{si}$  Values for Each Terrestrial Vertebrate Species, Land Use Category Combination**

<i>Scientific Name</i>	<i>Common Name</i>	<i>Land-Use i</i>													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>Botaurus lentiginosus</i>	American Bittern	0	0	0	0	0	0	0	0	0	0	0	0	1	0
<i>Nycticorax nycticorax</i>	Black-crowned Night-Heron	0	0	0	0	0	0	0	0	0	0	0	0.5	0.5	0
<i>Branta canadensis</i>	Canada Goose	0	0.5	0.5	0.5	0	0.5	0.5	0.5	0	0	0	0	1	0
<i>Anas crecca</i>	Green-Winged Teal	0	0	0	0	0	0	0	0	0	0	0	0	1	0
<i>Anas acuta</i>	Northern Pintail	0	0	0.5	0	0	1	0	0.5	0	0	0	0.5	1	0.5
<i>Anas cyanoptera</i>	Cinnamon Teal	0	0	0	0	0	0	0	0	0	0	0	0	1	0
<i>Anas clypeata</i>	Northern Shoveler	0	0	0	0	0	0	0	0	0	0	0	0	1	0
<i>Oxyura jamaicensis</i>	Ruddy Duck	0	0	0	0	0	0	0	0	0	0	0	0	1	0.5
<i>Pandion haliaetus</i>	Osprey	0	0	0	0	0	0	0	0	0.5	0	0	1	0.5	0
<i>Elanus leucurus</i>	White-tailed Kite	0	0	1	0	0	0	1	0.5	0	0	0.5	0.5	1	0.5
<i>Haliaeetus leucocephalus</i>	Bald Eagle	0	0	0	0	0	0	0	0	1	0.5	0.5	0.5	0.5	0
<i>Circus cyaneus</i>	Northern Harrier	0	0.5	0.5	0	0.5	0	0.5	1	0	0	0	0	1	0
<i>Accipiter gentilis</i>	Northern Goshawk	0	0	0	0	0	0	0	0	1	0	0	0	0	0
<i>Buteo lineatus</i>	Red-Shouldered Hawk	0	0	0	0	0	0.5	0.5	0	0	0.5	0.5	1	1	0
<i>Aquila chrysaetos</i>	Golden Eagle	0	0	0	0	0.5	0	0.5	0.5	0.5	0	0	0	0	0.5
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	0	0	0	0	0	0	0	0	1	0.5	0	0	0.5	0
<i>Actitis macularia</i>	Spotted Sandpiper	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0
<i>Phalaropus tricolor</i>	Wilson’s Phalarope	0	0	0	0	0	0	0	0	0	0	0	0	1	0
<i>Brachyramphus marmoratus</i>	Marbled Murrelet	0	0	0	0	0	0	0	0	1	0	0	0	0	0
<i>Strix occidentalis</i>	Spotted Owl	0	0	0	0	0	0	0	0	1	0	0	0	0	0
<i>Asio flammeus</i>	Short-eared Owl	0	0	0.5	0	0	0	0	1	0	0	0	0	1	0
<i>Ceryle alcyon</i>	Belted Kingfisher	0	0	0	0	0	0	0	0	0	0	0	0.5	1	0
<i>Melanerpes lewis</i>	Lewis’ Woodpecker	0	0	0	0	0	0	1	0	0	0	1	1	0	0
<i>Melanerpes formicivorus</i>	Acorn Woodpecker	0.5	0	0	0	0	0	0.5	0	0	0	1	0	0	0
<i>Chondestes grammacus</i>	Lark Sparrow	0	0.5	0.5	0	0.5	0.5	0.5	1	0	0	0.5	0	0	0
<i>Ammodramus savannarum</i>	Grasshopper Sparrow	0	0	0.5	0	0	0	0.5	1	0	0	0	0	0	0
<i>Sturnella neglecta</i>	Western Meadowlark	0	0.5	0.5	0	0	0	1	1	0	0	0	0	0.5	0
<i>Loxia curvirostra</i>	Red Crossbill	0	0	0	0	0.5	0	0	0	1	1	0	0	0	0
<i>Ondatra zibethicus</i>	Common muskrat	0	0	0	0	0	0	0	0	0	0	0	0	1	0
<i>Martes pennanti</i>	Fisher	0	0	0	0	1	0	0	0	1	0.5	0.5	0	0	0
<i>Mustela vison</i>	Mink	0	0	0	0	0	0	0	0	0	0	0	1	1	0
<i>Gulo gulo</i>	Wolverine	0	0	0	0	0	0	0	0	0.5	0.5	0	0	0	0
<i>Lutra canadensis</i>	Northern river otter	0	0	0	0	0	0	0	0	0	0	0	1	1	0
<i>Lynx lynx</i>	Lynx	0	0	0	0	1	0	0.5	0	1	1	1	1	0	0
<i>Odocoileus virginianus</i>	White-tailed deer	0.5	1	1	1	0.5	1	1	1	0.5	1	1	1	1	1
<i>Chrysemys picta</i>	Painted turtle	0	0	0	0	0	0	0.5	0.5	0	0	0	0.5	1	0
<i>Clemmys marmorata</i>	Western pond turtle	0	0	0	0	0	0	0.5	0.5	0	0	0	0.5	1	0

**Note:** After the analysis in this paper was completed we were alerted to an error in our  $C_{si}$  values for the *Mustela vison* and *Lutra Canadensis* species. For  $i = 9, 12, 13$   $C_{si} = 1$  and for  $i = 5$   $C_{si} = 0.5$  for these two species. If we had used these values in our analyses instead of those in the table above our simple and complex model values would have been slightly larger but the relative differences presented in the paper’s figures would barely change.

**SI Table 16:  $AR_s$  Values for Each Terrestrial Vertebrate Species**

<i>Scientific Name</i>	<i>Common Name</i>	<i><math>AR_s</math> (in hectares)</i>
<i>Botaurus lentiginosus</i>	American Bittern	25
<i>Nycticorax nycticorax</i>	Black-crowned Night-Heron	25
<i>Branta canadensis</i>	Canada Goose	200
<i>Anas crecca</i>	Green-Winged Teal	25
<i>Anas acuta</i>	Northern Pintail	25
<i>Anas cyanoptera</i>	Cinnamon Teal	25
<i>Anas clypeata</i>	Northern Shoveler	25
<i>Oxyura jamaicensis</i>	Ruddy Duck	25
<i>Pandion haliaetus</i>	Osprey	200
<i>Elanus leucurus</i>	White-tailed Kite	200
<i>Haliaeetus leucocephalus</i>	Bald Eagle	1000
<i>Circus cyaneus</i>	Northern Harrier	200
<i>Accipiter gentilis</i>	Northern Goshawk	200
<i>Buteo lineatus</i>	Red-Shouldered Hawk	200
<i>Aquila chrysaetos</i>	Golden Eagle	1000
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	200
<i>Actitis macularia</i>	Spotted Sandpiper	1
<i>Phalaropus tricolor</i>	Wilson's Phalarope	1
<i>Brachyramphus marmoratus</i>	Marbled Murrelet	25
<i>Strix occidentalis</i>	Spotted Owl	1000
<i>Asio flammeus</i>	Short-eared Owl	25
<i>Ceryle alcyon</i>	Belted Kingfisher	25
<i>Melanerpes lewis</i>	Lewis' Woodpecker	25
<i>Melanerpes formicivorus</i>	Acorn Woodpecker	25
<i>Chondestes grammacus</i>	Lark Sparrow	25
<i>Ammodramus savannarum</i>	Grasshopper Sparrow	25
<i>Sturnella neglecta</i>	Western Meadowlark	25
<i>Loxia curvirostra</i>	Red Crossbill	1000
<i>Ondatra zibethicus</i>	Common muskrat	25
<i>Martes pennanti</i>	Fisher	1000
<i>Mustela vison</i>	Mink	200
<i>Gulo gulo</i>	Wolverine	200
<i>Lutra canadensis</i>	Northern river otter	1000
<i>Lynx lynx</i>	Lynx	1000
<i>Odocoileus virginianus</i>	White-tailed deer	200
<i>Chrysemys picta</i>	Painted turtle	25
<i>Clemmys marmorata</i>	Western pond turtle	25

SI Table 17:  $1/\alpha_s$  Values for Each Terrestrial Vertebrate Species

<i>Scientific Name</i>	<i>Common Name</i>	$1/\alpha_s$ (in meters)
<i>Botaurus lentiginosus</i>	American Bittern	3200
<i>Nycticorax nycticorax</i>	Black-crowned Night-Heron	3200
<i>Branta canadensis</i>	Canada Goose	8000
<i>Anas crecca</i>	Green-Winged Teal	3200
<i>Anas acuta</i>	Northern Pintail	3200
<i>Anas cyanoptera</i>	Cinnamon Teal	3200
<i>Anas clypeata</i>	Northern Shoveler	3200
<i>Oxyura jamaicensis</i>	Ruddy Duck	3200
<i>Pandion haliaetus</i>	Osprey	8000
<i>Elanus leucurus</i>	White-tailed Kite	8000
<i>Haliaeetus leucocephalus</i>	Bald Eagle	32000
<i>Circus cyaneus</i>	Northern Harrier	8000
<i>Accipiter gentilis</i>	Northern Goshawk	8000
<i>Buteo lineatus</i>	Red-Shouldered Hawk	8000
<i>Aquila chrysaetos</i>	Golden Eagle	32000
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	8000
<i>Actitis macularia</i>	Spotted Sandpiper	800
<i>Phalaropus tricolor</i>	Wilson's Phalarope	800
<i>Brachyramphus marmoratus</i>	Marbled Murrelet	3200
<i>Strix occidentalis</i>	Spotted Owl	32000
<i>Asio flammeus</i>	Short-eared Owl	3200
<i>Ceryle alcyon</i>	Belted Kingfisher	3200
<i>Melanerpes lewis</i>	Lewis' Woodpecker	3200
<i>Melanerpes formicivorus</i>	Acorn Woodpecker	3200
<i>Chondestes grammacus</i>	Lark Sparrow	3200
<i>Ammodramus savannarum</i>	Grasshopper Sparrow	3200
<i>Sturnella neglecta</i>	Western Meadowlark	3200
<i>Loxia curvirostra</i>	Red Crossbill	32000
<i>Ondatra zibethicus</i>	Common muskrat	3200
<i>Martes pennanti</i>	Fisher	32000
<i>Mustela vison</i>	Mink	8000
<i>Gulo gulo</i>	Wolverine	8000
<i>Lutra canadensis</i>	Northern river otter	32000
<i>Lynx lynx</i>	Lynx	32000
<i>Odocoileus virginianus</i>	White-tailed deer	8000
<i>Chrysemys picta</i>	Painted turtle	3200
<i>Clemmys marmorata</i>	Western pond turtle	3200

SI Table 18: Point Symbols in Figure 1A

	Normalized Species Conservation (Simple Model)	Normalized Carbon Sequestration (Simple Model)	Contract Price (\$ / Acre / Year)	Average Conservation Budget (\$ / Year)	Average Aggregate WTA of Participating Landowners (\$ / Year)
<b>Baseline</b>	0.16369	0.12485	0	0	0
<b>All Scenario Graph</b>					
<b>\$1.0 M Point</b>	0.16628	0.12549	25	1,166,479	933,177
<b>\$5.0 M Point</b>	0.16851	0.12624	54	5,032,933	2,793,416
<b>\$10.0 M Point</b>	0.17038	0.12669	72	10,075,123	5,600,077
<b>Rare Habitat Scenario Graph</b>					
<b>\$1.0 M Point</b>	0.16614	0.12477	55	1,016,025	643,120
<b>\$5.0 M Point</b>	0.16836	0.12430	118	5,208,965	3,081,465
<b>\$10.0 M Point</b>	0.16955	0.12337	162	9,847,827	5,370,199
<b>Carbon Scenario Graph</b>					
<b>\$1.0 M Point</b>	0.16411	0.12746	45	955,311	647,228
<b>\$5.0 M Point</b>	0.16485	0.13209	85	5,000,684	3,053,412
<b>\$10.0 M Point</b>	0.16548	0.13541	112.5	9,936,351	6,625,545
<b>Riparian Scenario Graph</b>					
<b>\$1.0 M Point</b>	0.16448	0.12623	37	996,981	678,284
<b>\$5.0 M Point</b>	0.16543	0.12819	77	5,024,148	2,985,857
<b>\$10.0 M Point</b>	0.16592	0.12910	112	9,556,014	4,793,843
<b>Species Conservation Scenario Graph</b>					
<b>\$1.0 M Point</b>	0.16609	0.12523	58	997,832	596,965
<b>\$5.0 M Point</b>	0.16828	0.12530	135	5,015,472	2,424,960
<b>\$10.0 M Point</b>	0.17077	0.12441	188	10,887,421	5,787,098

Notes: Average aggregate WTA of participating landowners is given by  $\sum_{j=1}^{8176} I(WTA_j \leq CP)WTA_j A_j$  where  $j$  indexes parcels,  $I$  is an index function that is equal to 1 if  $WTA_j \leq CP$  holds and otherwise is equal to 0,  $WTA_j$  is the annual per-acre willingness-to-accept on  $j$ ,  $CP$  is the annual per acre contract price and  $A_j$  is  $j$ 's area in acres. The normalized baseline species conservation and carbon sequestration values are subtracted from the normalized scenario species conservation and carbon sequestration values before the points are graphed in Fig. 1A.

**SI Table 19: Data for Frontiers in Figure 1A**

	Lower-Right Terminal Point		Middle Point		Upper-Left Terminal Point	
	Normalized Species Conservation (Simple Model)	Normalized Carbon Seq. (Simple Model)	Normalized Species Conservation (Simple Model)	Normalized Carbon Seq. (Simple Model)	Normalized Species Conservation (Simple Model)	Normalized Carbon Seq. (Simple Model)
<b>\$1.0 M Frontier</b>	0.1677	0.1250	0.1674	0.1260	0.1653	0.1280
<b>\$5.0 M Frontier</b>	0.1726	0.1220	0.1714	0.1290	0.1658	0.1350
<b>\$10.0 M Frontier</b>	0.1766	0.1180	0.1749	0.1300	0.1699	0.1400

**Notes:** The normalized baseline species conservation and carbon sequestration values (SI Table 18) are subtracted from a frontiers' normalized species conservation and carbon sequestration values before the frontiers are graphed in Fig. 1A. The frontiers are generated using baseline land-use pattern 463.

SI Table 20: Data for Point Symbols in Figure 1B

	Normalized Species Conservation (Complex Model)	Normalized Carbon Sequestration (Complex Model)	Contract Price (\$ / Acre / Year)	Average Conservation Budget (\$ / Year)	Average Aggregate WTA of Participating Landowners (\$ / Year)
<b>Baseline</b>	0.13054	0.10729	0	0	0
<b>All Scenario Graph</b>					
<b>\$1.0 M Point</b>	0.14773	0.10995	25	1,166,479	933,177
<b>\$5.0 M Point</b>	0.16107	0.11401	54	5,032,933	2,793,416
<b>\$10.0 M Point</b>	0.17002	0.12085	72	10,075,123	5,600,077
<b>Rare Habitat Scenario Graph</b>					
<b>\$1.0 M Point</b>	0.14521	0.10640	55	1,016,025	643,120
<b>\$5.0 M Point</b>	0.15351	0.10698	118	5,208,965	3,081,465
<b>\$10.0 M Point</b>	0.15928	0.10863	162	9,847,827	5,370,199
<b>Carbon Scenario Graph</b>					
<b>\$1.0 M Point</b>	0.12992	0.11074	45	955,311	647,228
<b>\$5.0 M Point</b>	0.12859	0.11685	85	5,000,684	3,053,412
<b>\$10.0 M Point</b>	0.12822	0.12111	112.5	9,936,351	6,625,545
<b>Riparian Scenario Graph</b>					
<b>\$1.0 M Point</b>	0.13504	0.11002	37	996,981	678,284
<b>\$5.0 M Point</b>	0.13785	0.11553	77	5,024,148	2,985,857
<b>\$10.0 M Point</b>	0.13873	0.11872	112	9,556,014	4,793,843
<b>Species Conservation Scenario Graph</b>					
<b>\$1.0 M Point</b>	0.14542	0.10757	58	997,832	596,965
<b>\$5.0 M Point</b>	0.15427	0.11074	135	5,015,472	2,424,960
<b>\$10.0 M Point</b>	0.17181	0.11654	188	10,887,421	5,787,098

Notes: Average aggregate WTA of participating landowners is given by  $\sum_{j=1}^{8176} I(WTA_j \leq CP)WTA_j A_j$  where  $j$  indexes parcels,  $I$  is an index function that is equal to 1 if  $WTA_j \leq CP$  holds and otherwise is equal to 0,  $WTA_j$  is the annual per-acre willingness-to-accept on  $j$ ,  $CP$  is the annual per acre contract price and  $A_j$  is  $j$ 's area in acres. The normalized baseline species conservation and carbon sequestration values are subtracted from the normalized scenario species conservation and carbon sequestration values before the points are graphed in Fig. 1B.

**SI Table 21: Data for Frontiers in Figure 1B**

	<b>Lower-Right Terminal Point</b>		<b>Middle Point</b>		<b>Upper-Left Terminal Point</b>	
	<b>Normalized Species Conservation (Complex Model)</b>	<b>Normalized Carbon Seq. (Complex Model)</b>	<b>Normalized Species Conservation (Complex Model)</b>	<b>Normalized Carbon Seq. (Complex Model)</b>	<b>Normalized Species Conservation (Complex Model)</b>	<b>Normalized Carbon Seq. (Complex Model)</b>
<b>\$1.0 M Frontier</b>	0.1603	0.1260	0.1528	0.1280	0.1381	0.1290
<b>\$5.0 M Frontier</b>	0.1825	0.1270	0.1818	0.1460	0.1622	0.1520
<b>\$10.0 M Frontier</b>	0.2146	0.1360	0.2085	0.1480	0.1935	0.1500

**Notes:** The normalized baseline species conservation and carbon sequestration values (SI Table 20) are subtracted from a frontiers' normalized species conservation and carbon sequestration values before the frontiers are graphed in Fig. 1B. The frontiers are generated using baseline land-use pattern 463.

**SI Table 22: Data for the Graph in Figure 2**

	<b>Normalized Species Conservation (Simple Model)</b>	<b>Normalized Carbon Sequestration (Simple Model)</b>	<b>Conservation Budget (\$ / Year)</b>	<b>Aggregate WTA of Participating Landowners (\$ / Year)</b>
<b>Baseline</b>	0.1637	0.12485	0	0
<b>Point 1 on \$10 M Frontier</b>	0.1766	0.1180	10,000,000	10,000,000
<b>Point 2 on \$10 M Frontier</b>	0.1699	0.1400	10,000,000	10,000,000

**Notes:** The annual per-acre contract price for parcel  $j$  on the frontier is equal to  $j$ 's annual per acre willingness-to-accept conservation. Therefore, the efficiency frontier uses full price discrimination when setting a contract price for parcel  $j$ . Aggregate WTA of participating landowners is given by  $\sum_{j=1}^{8176} I(\text{Conservation}_j) WTA_j A_j$  where  $j$  indexes parcels,  $I$  is an index function that is equal to 1 if parcel  $j$  is placed into conservation and otherwise is equal to 0,  $WTA_j$  is the annual per-acre willingness-to-accept on  $j$ , and  $A_j$  is  $j$ 's area in acres. The normalized baseline species conservation and carbon sequestration values (SI Table 18) are subtracted from a frontiers' normalized species conservation and carbon sequestration values before the frontiers are graphed in Fig. 2.

**SI Table 23: Hectares in Each Land-Use Category on the Basin Maps in Figure 2**

	<b>Agriculture</b>	<b>Managed Forestry</b>	<b>Rural-Residential</b>	<b>Conserved Prairie, Oak Savanna, Marsh, or Scrub</b>	<b>Conserved Forested Land</b>	<b>Landscape Total</b>
<b>Map 1</b>	72,043	1,009,373	585,806	62,438	773,536	2,503,195
<b>Map 2</b>	80,217	1,007,163	579,774	31,731	804,310	2,503,195

**Notes:** The data in this table refers to the full Basin maps not the maps of the blown-up area.

**SI Table 24. Data for Point Symbols in Figure 3A**

	<b>Normalized Species Conservation (Simple Model)</b>	<b>Normalized Carbon Sequestration (Simple Model)</b>	<b>Contract Price (\$ / Acre / Year)</b>	<b>Conservation Budget (\$ / Year)</b>	<b>Aggregate WTA of Participating Landowners (\$ / Year)</b>
<b>Average Baseline (Origin Point)</b>	0.16369	0.12485	0	0	0
<b>95<sup>th</sup> Percentile Land-Use Pattern</b>					
<b>\$10.0 M Point</b>	0.1708	0.1357	72	10,111,000	5,962,400
<b>Mean Land-Use Pattern</b>					
<b>\$10.0 M Point</b>	0.1700	0.1244	72	8,714,500	5,169,700
<b>5<sup>th</sup> Percentile Land-Use Pattern</b>					
<b>\$10.0 M Point</b>	0.1702	0.1182	72	10,183,000	5,307,400

**Notes:** The origin point in Fig. 3A is the average baseline normalized species conservation and carbon sequestration values using the simple biophysical models. Aggregate WTA of participating landowners is given by  $\sum_{j=1}^{8176} I(WTA_j \leq CP)WTA_j A_j$  where  $j$  indexes parcels,  $I$  is an index function that is equal to 1 if the condition  $WTA_j \leq CP$  holds and otherwise is equal to 0,  $WTA_j$  is the annual per acre willingness-to-accept on  $j$ ,  $CP$  is the annual per acre contract price, and  $A_j$  is  $j$ 's area in acres. The 95<sup>th</sup> percentile policy-induced land-use pattern is generated using baseline land-use pattern 401. The mean policy-induced land-use pattern is generated using baseline land-use pattern 463. The 5<sup>th</sup> percentile policy-induced land-use pattern is generated using baseline land-use pattern 5. The normalized baseline species conservation and carbon sequestration values are subtracted from the normalized scenario species conservation and carbon sequestration values before the points are graphed in Fig. 3A.

**SI Table 25. Data for Efficiency Frontiers in Figure 3A**

	<b>Lower-Right Terminal Point</b>		<b>Middle Point</b>		<b>Upper-Left Terminal Point</b>	
	<b>Normalized Species Conservation (Simple Model)</b>	<b>Normalized Carbon Sequestration (Simple Model)</b>	<b>Normalized Species Conservation (Simple Model)</b>	<b>Normalized Carbon Sequestration (Simple Model)</b>	<b>Normalized Species Conservation (Simple Model)</b>	<b>Normalized Carbon Sequestration (Simple Model)</b>
<b>95<sup>th</sup> Percentile Land-Use Pattern</b>						
<b>\$10.0 M Frontier</b>	0.1773	0.130	0.1766	0.135	0.1713	0.148
<b>Mean Land-Use Pattern</b>						
<b>\$10.0 M Frontier</b>	0.1766	0.118	0.1749	0.13	0.1699	0.14
<b>5<sup>th</sup> Percentile Land-Use Pattern</b>						
<b>\$10.0 M Frontier</b>	0.1764	0.118	0.1731	0.128	0.1656	0.134

**Notes:** The 95<sup>th</sup> percentile frontier is generated using baseline land-use pattern 401. The mean frontier is generated using baseline land-use pattern 463. The 5<sup>th</sup> percentile frontier is generated using baseline land-use pattern 5. The baseline species conservation and carbon sequestration values (SI Table 24) are subtracted from a frontiers' normalized species conservation and carbon sequestration values before the frontiers are graphed in Fig. 3A.

**SI Table 26. Data for Point Symbols in Figure 3B**

	<b>Species Conservation (Complex Model)</b>	<b>Carbon Sequestration (Complex Model)</b>	<b>Contract Price (\$ / Acre / Year)</b>	<b>Annual Conservation Budget (\$ / Year)</b>	<b>Aggregate WTA of Participating Landowners (\$ / Year)</b>
<b>Average Baseline</b>	0.13054	0.10729	0	0	0
<b>95<sup>th</sup> Percentile Land Use Pattern</b>					
<b>\$10.0 M Point</b>	0.1892	0.1338	72	10,234,000	5,354,200
<b>Mean Land Use Pattern</b>					
<b>\$10.0 M Point</b>	0.1658	0.1224	72	8,714,500	5,169,700
<b>5<sup>th</sup> Percentile Land Use Pattern</b>					
<b>\$10.0 M Point</b>	0.1505	0.1069	72	9,716,400	5,055,100

**Notes:** The origin point in Fig. 3B is the average baseline normalized species conservation and carbon sequestration values using the complex biophysical models. Aggregate WTA of participating landowners is given by  $\sum_{j=1}^{8176} I(WTA_j \leq CP) WTA_j A_j$  where  $j$  indexes parcels,  $I$  is an index function that is equal to 1 if the condition  $WTA_j \leq CP$  holds and otherwise is equal to 0,  $WTA_j$  is the annual per acre willingness-to-accept on  $j$ ,  $CP$  is the annual per acre contract price, and  $A_j$  is  $j$ 's area in acres. The 95<sup>th</sup> percentile policy-induced land-use pattern is generated using baseline land-use pattern 106. The mean policy-induced land-use pattern is generated using baseline land-use pattern 463. The 5<sup>th</sup> percentile policy-induced land-use pattern is generated using baseline land-use pattern 245. The normalized baseline species conservation and carbon sequestration values are subtracted from the normalized scenario species conservation and carbon sequestration values before the points are graphed in Fig. 3B.

**SI Table 27. Data for Efficiency Frontiers in Figure 3B**

	<b>Lower-Right Terminal Point</b>		<b>Middle Point</b>		<b>Upper-Left Terminal Point</b>	
	<b>Species Conservation (Complex Model)</b>	<b>Carbon Sequestration (Complex Model)</b>	<b>Species Conservation (Complex Model)</b>	<b>Carbon Sequestration (Complex Model)</b>	<b>Species Conservation (Complex Model)</b>	<b>Carbon Sequestration (Complex Model)</b>
<b>95<sup>th</sup> Percentile Land-Use Pattern</b>						
<b>\$10.0 M Frontier</b>	0.3023	0.1560			0.2848	0.1600
<b>Mean Land-Use Pattern</b>						
<b>\$10.0 M Frontier</b>	0.2146	0.1360	0.2085	0.1480	0.1935	0.1500
<b>5<sup>th</sup> Percentile Land-Use Pattern</b>						
<b>\$10.0 M Frontier</b>	0.1932	0.1420	0.1921	0.1500	0.1879	0.1540

**Notes:** The 95<sup>th</sup> percentile frontier is generated using baseline land-use pattern 106. The mean frontier is generated using baseline land-use pattern 463. The 5<sup>th</sup> percentile frontier is generated using baseline land-use pattern 245. The baseline species conservation and carbon sequestration values (SI Table 26) are subtracted from a frontiers' normalized species conservation and carbon sequestration values before the frontiers are graphed in Fig. 3B.