

Appendix

Table A1. Sensitivity Analysis to The Short ($\alpha_{base}=0.69 \text{ year}^{-1}$) and Long-Distance Dispersal ($\gamma_{base}=3$) Parameters: Landowners’ Payoffs (\$) and Optimal Amount of Control (treatments) Under Decentralized Management (DM) and Central Planner (CP).

<i>S1. Slower short-distance dispersal ($\alpha_{slower}=0.01$)</i>						
	DM		CP		DM w.r.t. CP	
	Payoffs \$/acre	Control Treatments	Payoff \$/two acres	Control Treatments	\$/two acres	%
NMES	1,859 (252)	868 (26)	2,358 (120)	784 (24)	n/a	n/a
MES	15,287 (3,321)	997 (32)	17,521 (3,347)	520 (20)	n/a	n/a
Both	17,146 (3,321)	1,866 (41)	19,879 (3,349)	1,303 (31)	- 2,733	- 14
<i>S2. Faster short-distance dispersal ($\alpha_{faster}=3.91$)</i>						
NMES	781 (95)	0 (0)	1,975 (115)	858 (29)	n/a	n/a
MES	8,753 (2,541)	1,731 (44)	16,667 (3,367)	695 (25)	n/a	n/a
Both	9,534 (2,543)	1,731 (44)	18,642 (3,369)	1,553 (38)	- 9,108	- 49
<i>S3. Slower long-distance dispersal ($\gamma_{slower}=5$)</i>						
NMES	2,501 (106)	634 (26)	2,636 (106)	632 (20)	n/a	n/a
MES	17,380 (3,374)	363 (19)	17,380 (3,374)	489 (22)	n/a	n/a
Both	19,881 (3,376)	997 (32)	20,017 (3,376)	1,121 (30)	- 136	- 1
<i>S4. Faster long-distance dispersal ($\gamma_{faster}=1.5$)</i>						
NMES	660 (7)	0 (0)	- 2,673 (85)	1,566 (2)	n/a	n/a
MES	1,518 (271)	0 (0)	16,886 (3,288)	792 (3)	n/a	n/a
Both	2,178 (271)	0 (0)	14,213 (3,290)	2,357 (3)	- 12,034	- 85

n/a: not applicable; w.r.t.: with respect to; Standard deviations in parentheses; NMES: non-market ecosystem service preference landowner; MES: market ecosystem service preference landowner.

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Table A1 (continued). Sensitivity Analysis to The Short ($\alpha_{base}=0.69 \text{ year}^{-1}$) and Long-Distance Dispersal ($\gamma_{base}=3$) Parameters: Landowners’ Payoffs (\$) and Optimal Amount of Control (treatments) Under Decentralized Management (DM) and Central Planner (CP).

<i>S5. Slower short-distance ($\alpha_{slower}=0.01$) and slower long-distance dispersal ($\gamma_{slower}=5$)</i>						
	DM		CP		DM w.r.t. CP	
	Payoffs	Control Treatment	Payoff	Control		
	<i>\$/acre</i>	<i>s</i>	<i>\$/two acres</i>	<i>Treatments</i>	<i>\$/two acres</i>	<i>%</i>
NMES	3,088 (113)	493 (21)	3,163 (97)	478 (19)	n/a	n/a
MES	17,687 (3,377)	323 (11)	17,867 (3,321)	319 (10)	n/a	n/a
Both	20,775 (3,379)	816 (24)	21,030 (3,322)	797 (22)	- 255	- 1
<i>S6. Slower short-distance ($\alpha_{slower}=0.01$) and faster long-distance dispersal ($\gamma_{faster}=1.5$)</i>						
NMES	966 (71)	0 (0)	- 937 (65)	785 (0)	n/a	n/a
MES	1,518 (271)	0 (0)	17,039 (3,255)	785 (0)	n/a	n/a
Both	2,485 (280)	0 (0)	16,102 (3,256)	1,569 (0)	- 13,617	- 85
<i>S7. Faster short-distance ($\alpha_{faster}=3.91$) and slower long-distance dispersal ($\gamma_{slower}=5$)</i>						
NMES	815 (112)	0 (0)	1,749 (172)	846 (27)	n/a	n/a
MES	14,300 (3,055)	858 (36)	17,278 (3,373)	502 (20)	n/a	n/a
Both	15,115 (3,057)	858 (36)	19,027 (3,377)	1,348 (33)	- 3,912	- 21
<i>S8. Faster short-distance ($\alpha_{faster}=3.91$) and faster long-distance dispersal ($\gamma_{faster}=1.5$)</i>						
NMES	700 (93)	0 (0)	- 1,425 (92)	785 (0)	n/a	n/a
MES	1,518 (271)	0 (0)	16,695 (3,290)	786 (0)	n/a	n/a
Both	2,218 (286)	0 (0)	15,270 (3,292)	1,570 (0)	- 13,052	- 85

n/a: not applicable; w.r.t.: with respect to; Standard deviations in parentheses; NMES: non-market ecosystem service preference landowner; MES: market ecosystem service preference landowner.

Table A2. Sensitivity analysis to NMES benefits. Landowners’ Payoffs (\$) and Optimal Amount of Control (treatments) Under Decentralized Management (DM) and Central Planner (CP).

<i>a. Sensitivity to a larger intercept of the user days function ($b_0=28$ days per year)</i>						
	DM		CP		DM w.r.t. CP	
	Payoffs	Control Treatment	Payoff	Control		
	\$/acre	<i>s</i>	\$/two acres	Treatments	\$/two acres	%
G_A (NMES)	3,815 (254)	1,251 (42)	5,614 (187)	785 (30)	n/a	n/a
G_B (MES)	16,058 (3,360)	671 (34)	16,806 (3,340)	677 (26)	n/a	n/a
G_A+G_B	19,873 (3,369)	1,922 (54)	22,420 (3,345)	1,462 (40)	- 2,547 ***	- 11
<i>b. Sensitivity to larger linear parameters ($a_1=0.36$/ day/ additional healthy tree per acre and $b_1=0.36$ days per additional healthy tree per acre)</i>						
G_A (NMES)	5,357 (317)	1,255 (44)	6,736 (286)	925 (37)	n/a	n/a
G_B (MES)	15,985 (3,415)	668 (38)	16,667 (3,367)	718 (29)	n/a	n/a
G_A+G_B	21,342 (3,430)	1,923 (58)	23,403 (3,379)	1,643 (47)	- 2,061 ***	- 9
<i>c. Sensitivity to additional, non-recreation NMES benefits such as carbon sequestration, air pollutant removal, and water filtration (\$350 per acre).</i>						
G_A (NMES)	7,399 (171)	788 (36)	7,921 (182)	778 (31)	n/a	n/a
G_B (MES)	16,705 (3,339)	541 (34)	16,833 (3,397)	681 (26)	n/a	n/a
G_A+G_B	24,104 (3,343)	1,329 (49)	24,754 (3,402)	1,459 (41)	- 650 ***	- 3

n/a: not applicable; w.r.t.: with respect to; *** Statistically different from zero at the 1% level.

Standard deviations in parentheses. NMES: non-market ecosystem service preferences; MES: market ecosystem service preferences.

Table A3. Surveillance and early detection. Landowners’ Payoffs (\$) and Optimal Amount of Control (treatments) Under Decentralized Management (DM) and Central Planner (CP).

<i>a. Surveillance and early detection</i>						
	DM		CP		DM w.r.t. CP	
	Payoffs	Control	Payoff	Control Treatment		
	<i>\$/acre</i>	<i>Treatments</i>	<i>\$/two acres</i>	<i>s</i>	<i>\$/two acres</i>	<i>%</i>
G_A (NMES)	1,648 (184)	0 (0)	2,503 (90)	680 (26)	n/a	n/a
G_B (MES)	11,250 (2733)	1,416 (21)	16,705 (3,339)	779 (29)	n/a	n/a
G_A+G_B	12,898 (2739)	1,416 (21)	19,208 (3,340)	1,460 (38)	- 6,310	- 33
<i>b. Surveillance and early detection, lower short-distance dispersal, and $L_1=0$</i>						
G_A (NMES)	2,319 (272)	654 (19)	3,294 (72)	398 (13)	n/a	n/a
G_B (MES)	16,261 (3,362)	866 (29)	18,175 (3,323)	171 (12)	n/a	n/a
G_A+G_B	18,580 (3,373)	1,520 (35)	21,468 (3,324)	569 (17)	- 2,888	- 13

n/a: not applicable; w.r.t.: with respect to; Standard deviations in parentheses. NMES: non-market

ecosystem service preferences; MES: market ecosystem service preferences.