Table S1. Summary of study site characteristics and management regimes

Location	Site name	Exclosure size (ha)	Community planted	Year
Glen Affric	Coille Ruigh	50	Scots pine and mixed broadleaves	1990
Glen Affric	Meallan	55	Scots pine, some aspen	1991-1995
			Mixed broadleaves	2002-2006
Glen Affric	Glac Daraich	35	Scots pine, some birch and aspen	1992-1994
			Mixed broadleaves	2002-2006
Glen Affric	Coire an t'Sneachda	6.2	Scots pine and mixed broadleaves	2012-2013
Dundreggan	Meall na Faiche	446	Scots pine	2002
			Mixed broadleaves	2005
Dundreggan	Northwest Plantation	45.2	Scots pine and mixed broadleaves	2010-2011
Dundreggan	Allt Fearna	150	Scots pine and mixed broadleaves	2012-2014
Dundreggan	Allt Ruadh	177	Scots pine and mixed broadleaves	2016-ongoing

Table S2. List of sources for each species' biomass equations and wood density estimates

Species	Binomial name	Species used for biomass equation	Reference	Species used for wood density value	Reference
Scots pine	*Pinus sylvestris*	*Pinus sylvestris*	Xiao and Ceulemans, 2004	*Pinus sylvestris*	Brzeziecki & Kienast, 1994
Downy birch	*Betula pubescens*	*Betula pubescens and pendula*	Bunce, 1968	*Betula pubescens*	Brzeziecki & Kienast, 1994
Silver birch	*Betula pendula*	*Betula pubescens and pendula*	Bunce, 1968	*Betula pubescens*	Brzeziecki & Kienast, 1994
Rowan	*Sorbus aucuparia*	*Sorbus aucuparia*	Bouchon et al. 1985	*Sorbus aucuparia*	Brzeziecki & Kienast, 1994
Lodgepole pine	*Pinus contorta*	*Pinus sylvestris*	Xiao and Ceulemans, 2004	*Pinus contorta*	Alden, 1997
Aspen	*Populus tremula*	*Populus tremula*	Johansson, 1999	*Populus tremula*	Brzeziecki & Kienast, 1994
Hazel	*Corylus avellana*	*Corylus avellana*	Albert et al. 2014	*Corylus avellana*	Schütt et al. 1994
Eared willow	*Salix aurita*	Mixed *Salix spp.*	Hytönen and Aro, 2012	*Salix caprea*	Brzeziecki & Kienast, 1994
Juniper	*Juniperus communis*	*Juniperus osteosperma*	Chojnacky, 1984	*Juniperus communis*	Brzeziecki & Kienast, 1994
Sitka spruce	*Picea sitchensis*	*Picea sitchensis*	Green et al. 2007	*Picea sitchensis*	Schütt et al. 1994
Bird cherry	*Prunus padus*	*Prunus pensylvanica*	MacLean et al. 1976	*Prunus padus*	Cheng et al. 1992

Deriving diameter growth equations for trees on heather moorland

In order to derive DBH- and height-age equations for trees growing in moorland landscapes, we adapted data from Palmer & Truscott (2003). The authors present empirical relationships between the basal diameter increment and the basal diameter in the previous year in a sample of Scots pine gown on a south-facing site in Scottish moorland at 300m altitude. Specifically, we used their most conservative relationships between growth rate and diameter in the previous year presented in their study (ie. relationship C in their Figure 10), so as to ensure that our estimate of the amount of biomass attributable to natural regeneration is conservative. We digitalised their data using PlotDigitizer (available at http://download.cnet.com/Plot-Digitizer/3000-20414_4-75810596.html), and extrapolated the diameter increment - stem diameter in previous year from Figure 10 using the best fit relationship to infer what diameter increment would be expected when stem diameter was zero (Figure S1). We then equated a stem diameter of zero to year zero, and calculated diameter as a function of age using the diameter increment - stem diameter in previous year relationship in Figure S1. Finally, we calculated the polynomial that best fit that data to derive an equation for diameter as a function of age (Figure S2).

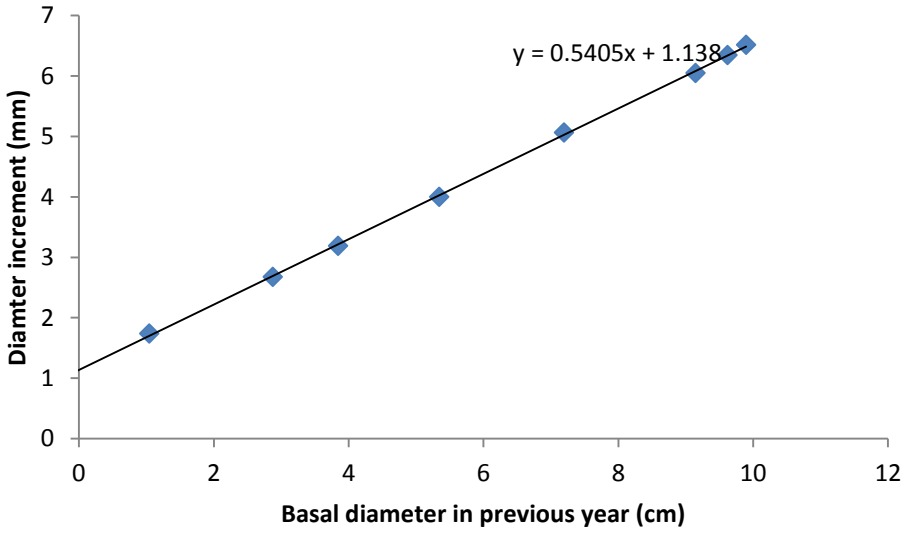

Figure S1. Diameter increment - diameter in previous year relationship from Palmer & Truscott (2003)

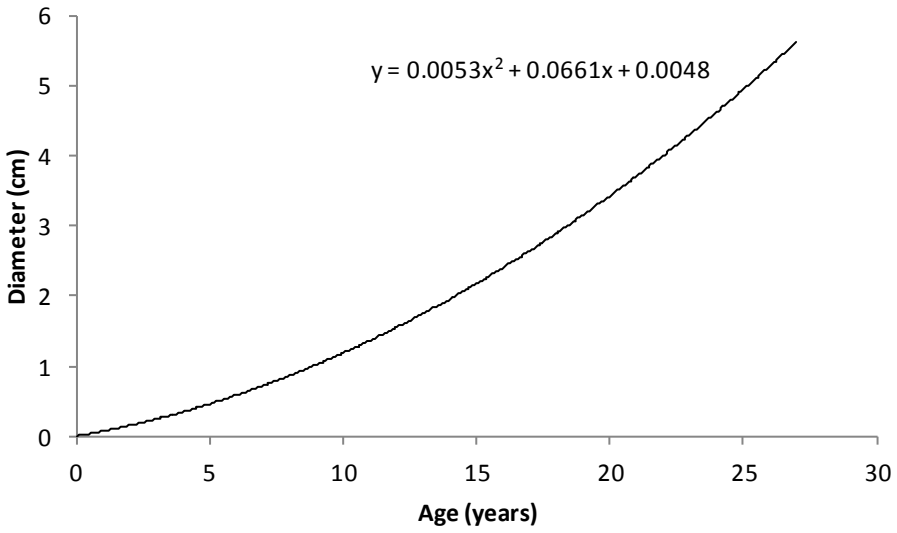

Figure S2. Diameter - age relationship for trees growing in moorland landscapes calculated from Palmer & Truscott (2003)

Pollinator observations using camera recordings

A GoPro camera was set up at each location and directed at an artificial violet flower soaked in wildflower honey, placed in a patch of flowering plants in order to maximise pollinator attractiveness (Welsford & Johnson 2012). Videos were recorded for 75 minutes between 12.00 and 16.30. This method identified 25 individual pollinators during the course of our field season.

Regression analyses

Table S3. Outputs of the full model testing the effects of human- and ecological factors on ln aboveground woody biomass between plots. Robust standard errors given. Adjusted R^2= 0.64, residual standard error=1.16 on 139 degrees of freedom, p-value<0.001.

Regressor	Estimate	Std. error	t-value	p-value
Intercept	1.51	1.01	1.49	0.14
Time since rewilding	0.08	0.01	6.68	<0.001***
Altitude	0.00	0.00	-1.44	0.15
Total number of stems	0.02	0.00	7.42	<0.001***
Site Allt Ruadh	-0.27	0.37	-0.73	0.47
Site Coille Ruigh	-1.09	0.41	-2.63	0.01**
Site Glen Daraich	0.99	0.43	2.30	0.02*
Site Meall na Faiche	0.00	0.38	0.01	0.99
Site Meallan	-0.27	0.42	-0.63	0.53
Site Northwest Plantation	0.45	0.37	1.20	0.23
Site Coire an t'Sneachda	0.19	0.42	0.47	0.64
Percentage bog	0.00	0.01	0.31	0.76
Time since rewilding : total number of stems	0.00	0.00	0.62	0.54

Table S4. Outputs of the full model testing the effect of different factors on mean pollinator visitation rates between exclosures. Adjusted R^2= 0.20, residual standard error=4.42 on 25 degrees of freedom, p-value=0.07.

Regressor	Estimate	Std. error	t value	p value
(Intercept)	-6.15	12.32	-0.50	0.62
Altitude	0.01	0.03	0.16	0.87
Percentage cover flowering plants	0.08	0.10	0.84	0.41
Mean plant species richness	0.62	1.94	0.32	0.75
Time since rewilding	-0.22	0.27	-0.84	0.41
Mean number of stems / ha	0.00	0.00	0.71	0.48
Time since rewilding : Mean number of stems / ha	0.00	0.00	1.58	0.13

Table S5. Outputs of the full model testing the effect of time since rewilding on mean photo aesthetic quality. Adjusted R^2= 0.71, residual standard error=0.61 on 71 degrees of freedom, p-value<0.001.

Regressor	Estimate	Std. error	t value	p value
(Intercept)	0.81	0.63	1.30	0.20
Time since rewilding	0.06	0.01	7.65	0.00***
Water	0.82	0.15	5.36	0.00***
Vegetation cover	-0.13	0.24	-0.54	0.59
Manmade elements	-0.21	0.33	-0.63	0.53
Horizon	0.32	0.13	2.43	0.02*
Colour contrast	0.33	0.25	1.33	0.19
Scale effect	0.09	0.17	0.52	0.60
Visability	-0.71	0.18	-3.95	0.00***

Table S6. Demographic responses from participants in the study. Census data taken from the 2001 Scottish Government data (ScotlandCensus.gov.uk, 2017)

Demographics		
Gender	Survey	Census
Male	48.5%	48.5%
Female	51.5%	51.5%
Age		
18-24	16.2%	11.9%
25-34	23.1%	15.7%
35-44	12.2%	17.3%
45-54	23.6%	18.5%
55-64	19.7%	15.7%
65+	5.2%	20.9%
Employment status		
Full time employed	49.3%	36.4%
Part time / Zero hours contractor	10.9%	14.3%
Retired	7.4%	22.3%
Self employed	7.9%	7.0%
Student	21.4%	5.0%
Out of Work	1.3%	5.1%
Unable	0.4%	6.7%
Homemaker	0.9%	3.3%

Prefer not to say	0.4%	-
Educational attainment		
Further education (A-levels or equivalent)	12.7%	9.7%
Higher education (PhD, Masters or bachelor degree or equivalent)	82.5%	26.1%
No formals qualifications	3.5%	64.2%
Prefer not to say	1.3%	-
Response to question. "What is your main activity in the highlands?"		
Other recreational activity (eg. fishing, sightseeing)	19.5%	
Resident	10.4%	
Walking / hiking / climbing	55.4%	
Work - tourism	1.3%	
Work - Farming	2.6%	
Never visited (N/A)	7.6%	
work - other	3.5%	
Response to question. "How often do you visit the highlands?"		
Frequent visitor	36.7%	
Infrequent visitor (less than once every 6 months)	37.1%	
Never visited	9.6%	
Resident	16.6%	

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