1 SUPPLEMENTARY FIGURES
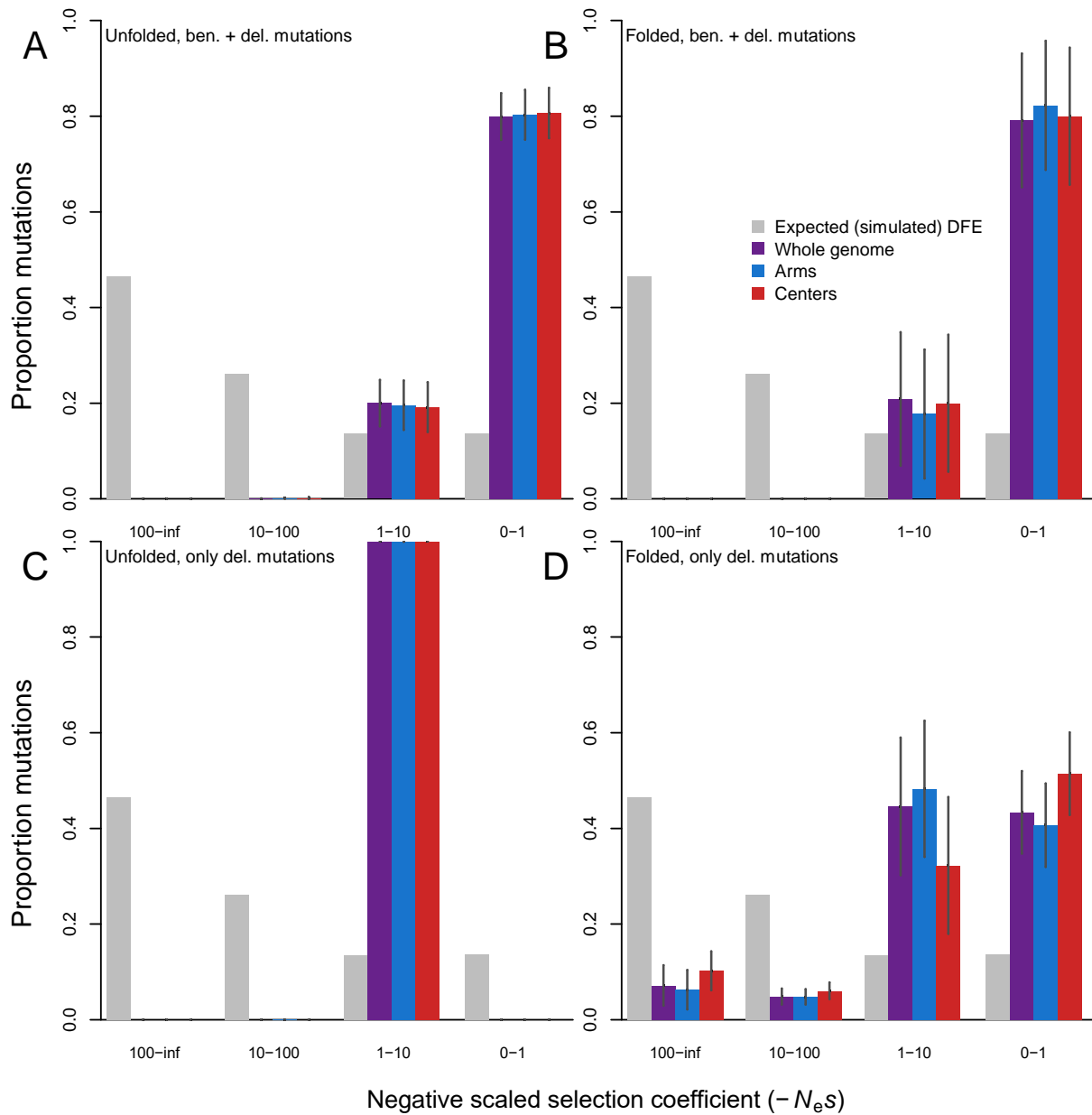

2

Figure S1. DFE-alpha analysis of simulated datasets using unfolded SFS as input (A, C) versus
the folded SFS as input (B,D, as in Figure 6). These analyses performed more poorly than folded
analyses at matching the input DFE (gray bars), particularly when simulations only included
deleterious mutations (C,D), so therefore were not used in further analyses. All estimated
parameters of the inferred DFE are listed in Table S2.

Table S1. The set of 326 *C. elegans* strains used in this study, and their classification as "swept" or "divergent" (see main text Methods for details).

strain	strain_set	strain	strain_set	strain	strain_set	strain	strain_set
AB1	swept	EG4946	swept	JU3134	swept	NIC268	divergent
BRC20067	swept	GXW1	swept	JU3135	swept	NIC269	swept
BRC20263	swept	JT11398	swept	JU3137	swept	NIC271	swept
CB4851	swept	JU1088	swept	JU3140	swept	NIC272	swept
CB4852	swept	JU1172	swept	JU3141	swept	NIC274	swept
CB4853	swept	JU1200	swept	JU3144	swept	NIC275	swept
CB4854	swept	JU1212	swept	JU3166	swept	NIC276	swept
CB4855	swept	JU1213	swept	JU3167	divergent	NIC277	swept
CB4856	divergent	JU1242	swept	JU3169	swept	NIC3	swept
CB4857	swept	JU1246	swept	JU3224	swept	NIC501	swept
CB4858	swept	JU1249	swept	JU3225	swept	NIC511	swept
CB4932	swept	JU1395	swept	JU3226	divergent	NIC513	swept
CX11254	swept	JU1400	swept	JU3228	swept	NIC514	swept
CX11262	swept	JU1409	swept	JU323	swept	NIC515	swept
CX11264	swept	JU1440	swept	JU3280	swept	NIC522	swept
CX11271	swept	JU1491	swept	JU3282	swept	NIC523	swept
CX11276	swept	JU1530	swept	JU3291	swept	NIC526	swept
CX11285	swept	JU1543	swept	JU346	swept	NIC527	swept
CX11292	swept	JU1568	swept	JU360	swept	NIC528	swept
CX11307	swept	JU1581	swept	JU367	swept	NIC529	swept
CX11314	swept	JU1586	swept	JU393	swept	PB303	swept
CX11315	swept	JU1652	swept	JU394	swept	PB306	swept
DL200	swept	JU1666	swept	JU397	swept	PS2025	swept
DL226	swept	JU1792	swept	JU406	swept	PX179	swept
DL238	divergent	JU1793	swept	JU440	swept	QG2075	swept
ECA189	divergent	JU1808	swept	JU561	swept	QG2811	swept
ECA191	divergent	JU1896	swept	JU642	swept	QG2813	swept
ECA347	divergent	JU1934	swept	JU751	swept	QG2818	swept
ECA348	swept	JU2001	swept	JU774	swept	QG2823	swept
ECA349	swept	JU2007	swept	JU775	swept	QG2824	swept
ECA36	divergent	JU2016	swept	JU778	swept	QG2825	swept
ECA363	divergent	JU2017	swept	JU782	swept	QG2827	swept
ECA369	divergent	JU2106	swept	JU792	swept	QG2828	swept
ECA372	divergent	JU2131	swept	JU830	swept	QG2832	swept
ECA396	divergent	JU2141	swept	JU847	swept	QG2835	swept
ECA592	swept	JU2234	swept	KR314	swept	QG2836	swept
ECA593	divergent	JU2250	swept	LKC34	swept	QG2837	swept
ECA594	swept	JU2257	swept	MY1	swept	QG2838	swept
ECA640	swept	JU2316	divergent	MY10	swept	QG2841	swept
ECA703	divergent	JU2464	swept	MY16	divergent	QG2843	swept
ECA705	divergent	JU2466	swept	MY18	swept	QG2846	swept
ECA706	divergent	JU2478	swept	MY2147	swept	QG2850	swept

ECA710	divergent	JU2513	swept	MY2212	swept	QG2854	swept
ECA712	divergent	JU2519	swept	MY23	divergent	QG2855	swept
ECA722	divergent	JU2522	swept	MY2453	swept	QG2857	swept
ECA723	divergent	JU2526	divergent	MY2530	swept	QG2873	swept
ECA724	divergent	JU2534	swept	MY2535	swept	QG2874	swept
ECA730	divergent	JU2565	swept	MY2573	swept	QG2875	swept
ECA732	divergent	JU2566	swept	MY2585	swept	QG2877	swept
ECA733	divergent	JU2570	swept	MY2693	swept	QG2932	swept
ECA738	divergent	JU2572	swept	MY2713	swept	QG536	swept
ECA740	divergent	JU2575	swept	MY2741	swept	QG556	swept
ECA741	divergent	JU2576	swept	MY518	swept	QG557	swept
ECA742	divergent	JU2578	swept	MY679	swept	QW947	swept
ECA743	divergent	JU258	swept	MY772	swept	QX1211	divergent
ECA744	divergent	JU2581	swept	MY795	swept	QX1212	swept
ECA745	divergent	JU2586	swept	MY920	swept	QX1233	swept
ECA746	divergent	JU2587	swept	N2	swept	QX1791	divergent
ECA760	divergent	JU2592	swept	NIC1	swept	QX1792	swept
ECA768	divergent	JU2593	swept	NIC1049	swept	QX1793	divergent
ECA777	divergent	JU2600	swept	NIC1107	swept	QX1794	divergent
ECA778	divergent	JU2610	swept	NIC1119	swept	RC301	swept
ECA807	divergent	JU2619	swept	NIC166	swept	WN2001	swept
ECA812	divergent	JU2800	swept	NIC195	swept	WN2002	swept
ECA923	swept	JU2811	swept	NIC199	swept	WN2033	swept
ECA928	swept	JU2825	swept	NIC2	swept	WN2050	swept
ECA930	swept	JU2829	swept	NIC207	swept	WN2063	swept
ED3005	swept	JU2838	swept	NIC231	swept	WN2064	swept
ED3011	swept	JU2841	swept	NIC236	swept	WN2066	swept
ED3012	swept	JU2853	swept	NIC242	swept	XZ1513	divergent
ED3017	swept	JU2862	swept	NIC251	divergent	XZ1514	divergent
ED3040	swept	JU2866	swept	NIC252	swept	XZ1515	swept
ED3046	swept	JU2878	swept	NIC255	swept	XZ1516	ancestor
ED3048	swept	JU2879	swept	NIC256	swept	XZ1672	swept
ED3049	swept	JU2906	swept	NIC258	swept	XZ1734	swept
ED3052	swept	JU2907	swept	NIC259	swept	XZ1735	swept
ED3073	swept	JU310	swept	NIC260	swept	XZ1756	swept
ED3077	swept	JU311	swept	NIC261	swept	XZ2018	swept
EG4347	swept	JU3125	swept	NIC262	swept	XZ2019	divergent
EG4349	swept	JU3127	swept	NIC265	divergent	XZ2020	swept
EG4724	swept	JU3128	swept	NIC266	swept		
EG4725	swept	JU3132	swept	NIC267	swept		

12

13

Table S2. Inferred parameters of the DFE for the simulated datasets using DFE-alpha, averaged
over 20 replicate simulations in each row.

Dataset	Genome portion	Mutation set	Simulated census size	Simulated mean selection coefficient for deleterious mutation distribution	Simulated shape parameter for deleterious mutation distribution	Simulated dominance parameter (h)	Population size after first epoch, in 2-epoch mode (N2, relative to N1 = 100)	Duration of epoch after first population size change (t2)	Weighted recent effective population size (Nw, Keightley & Eyre-Walker 2009)	Mean selection coefficient (Es)	Shape parameter (b)
Simulated mixture distribution, folded SFS	Whole	Beneficial + deleterious	500,000	95% s = -0.001 5% s = -0.01	95% shape = 0.3 5% shape = 0.3	95% h = 0.3 5% h = 0.2	1000	101.00	144.32	-0.01	100.00
	Arms	Beneficial + deleterious					1000	101.00	144.32	-0.01	100.00
	Centers						1000	101.00	144.32	-0.01	100.00
	Whole	Only deleterious					660	111.00	145.17	-0.02	1.14
	Arms						600	101.00	140.36	-0.02	1.15
	Centers						799	135.71	156.91	-2.52	0.05
Simulated mixture distribution, unfolded SFS	Whole	Beneficial + deleterious	500,000	95% s = -0.001 5% s = -0.01	95% shape = 0.3 5% shape = 0.3	95% h = 0.3 5% h = 0.2	1000	96.00	142.18	0.00	0.62
	Arms	Beneficial + deleterious					1000	96.00	142.18	-0.01	0.56
	Centers						1000	96.70	142.48	0.00	0.85
	Whole	Only deleterious					545	86.07	133.79	-0.03	100.00
	Arms						495	78.13	129.97	-0.03	100.00
	Centers						660	104.91	142.78	-0.03	100.00
Simulated extreme gamma	Whole	Beneficial + deleterious	500,000	s = -0.1606135	shape = 2.1304	h = 0.3	1000	102.29	144.87	-5.17E+10	0.10
	Arms						1000	101.93	144.72	-3.42E+13	0.10
	Centers						1000	104.42	145.78	-3.12E+13	0.10
Outcrossing, simulated mixture distribution	Whole	Beneficial + deleterious	50,000	95% s = -0.001 5%	95% shape = 0.3 5%	95% h = 0.3 5%	483.75	135.37	150.11	-0.06	0.32
	Arms						425.4	141.22	149.77	-0.07	0.32
	Centers						1000	125.94	154.92	-0.03	0.36
Outcrossing, simulated extreme distribution	Whole			s = -0.1606135	shape = 2.1304	h = 0.3	459	131.62	147.96	-67.73	0.71
	Arms						411.05	141.84	149.29	-91.74	0.70
	Centers						1000	131.69	157.35	-18.46	0.74