

Dataset S1: Body mass estimates in grams for all mammal species included in this study. Also included is the source of this measurement. PBDB = Paleobiology Database, NOW = Neogene Old World Database, EOL = Encyclopedia of Life, ADW = Animal Diversity Web. PBDB + regression indicates that body mass was estimated from a measurement on the PBDB using one of the many regression equations listed in Table S3.

Species	Mass (g)	Source	Suspicious
Aaptoryctes ivyi	215.70	PBDB + regression	
Absarokius abbotti	176.39	PBDB + regression	
Absarokius metoecus	166.29	PBDB + regression	
Acarictis ryani	291.90	PBDB + regression	
Achaenodon robustus	492900.83	PBDB + regression	
Achlyoscapter longirostris	11.94	(1)	
Acmeodon secans	325.36	PBDB + regression	
Acritohippus isonesus	135944.23	(1)	
Acritohippus quinni	178082.11	(1)	
Acritoparamys atwateri	190.07	PBDB + regression	
Acritoparamys francesi	125.17	PBDB + regression	
Acritoparamys pattersoni	432.28	PBDB	
Acritoparamys wyomingensis	274.75	PBDB	
Adeloblarina berklandi	12.68	(1)	
Adelphailurus kansensis	33189.87	(1)	
Adilophontes brachykolos	119372.01	(1)	
Adjidaumo burkei	4.91	PBDB	*
Adjidaumo craigi	7.29	PBDB + regression	*
Adjidaumo intermedius	10.39	PBDB + regression	*
Adjidaumo maximus	20.14	PBDB + regression	*
Adjidaumo minimus	7.29	PBDB + regression	*
Adjidaumo minutus	15.90	PBDB + regression	*
Adunator ladae	17.36	PBDB + regression	*
Aelurodon asthenostylus	22026.47	(1)	
Aelurodon ferox	26370.47	(1)	
Aelurodon mcgrewi	22247.84	(1)	
Aelurodon montanensis	27722.51	(1)	
Aelurodon stirtoni	20537.34	(1)	
Aelurodon taxoides	29436.77	(1)	
Aepinacodon americanus	423622.49	(2)	
Aepycamelus bradyi	516464.33	(3)	
Aepycamelus giraffinus	499050.27	PBDB	
Aepycamelus robustus	420836.64	(1)	
Aepycamelus stocki	348014.70	(1)	
Aethomylos simplicidens	30.03	PBDB + regression	
Ageitodendron matthewi	331.60	PBDB + regression	
Agriochoerus antiquus	56387.34	(1)	
Agriochoerus guyotianus	59000.00	(4)	
Agriotherium schneideri	355045.06	(1)	
Alagomys russelli	4.67	PBDB + regression	*
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Aletodon conardae	576.81	PBDB + regression	
Aletodon gunnelli	615.51	PBDB + regression	
Aletodon quadravus	365.67	PBDB + regression	
Aletomeryx gracilis	27173.57	(1)	
Alforjas taylori	408399.03	(1)	
Alilepus vagus	225.12	PBDB + regression	
Alilepus wilsoni	111.45	PBDB + regression	
Allomys cristabrevis	239.72	PBDB + regression	
Allomys simplicidens	122.00	(4)	
Allomys storeri	92.85	PBDB + regression	
Alluvisorex arcadentes	5.70	(1)	
Alphagaulus pristinus	521.00	(4)	
Alphagaulus vetus	523.22	(1)	
Alticonus gazini	1140.52	PBDB + regression	
Alveojunctus minutus	25.80	PBDB + regression	
Alveugena carbonensis	815.39	PBDB	
Alwoodia harkseni	294.29	PBDB + regression	
Alwoodia magna	226.00	(4)	
Amebelodon floridanus	37020787.90	PBDB + regression	
Amelotabes simpsoni	57.16	PBDB + regression	
Ammospermophilus hanfordi	58.00	(4)	
Ammospermophilus junturensis	53.52	(1)	
Amphechinus horncloudi	175.91	(1)	
Amphicaenopus platycephalus	2397650.84	(1)	
Amphicyon frendens	245241.81	(1)	
Amphicyon galushai	138690.48	(1)	
Amphicyon ingens	600000.00	(5)	
Amphicyon longiramus	113550.16	(1)	
Amphicyon riggsi	418398.16	PBDB	
Amphimachairodus coloradensis	157147.46	PBDB + regression	
Ampliconus antoni	2906.21	PBDB + regression	
Amynodon advenus	1987010.17	PBDB + regression	
Amynodon reedi	579004.85	PBDB	
Amynodontopsis bodei	608129.44	PBDB + regression	
Anaptomorphus aemulus	95.39	PBDB + regression	
Anaptomorphus westi	186.75	PBDB + regression	
Anasazia williamsoni	186.23	(6)	
Anchitherium clarencei	230960.04	(1)	
Anconodon cochranensis	57.00	(7)	
Anemorhysis natronensis	32.59	PBDB + regression	
Anemorhysis pattersoni	57.16	PBDB + regression	
Anemorhysis pearcei	32.00	(8)	
Anemorhysis wortmani	42.74	PBDB + regression	
Angustidens vireti	18.17	(1)	
Anisonchus oligistus	388.07	PBDB + regression	
Anisonchus onostus	616.78	PBDB + regression	
Anisonchus sectorius	1619.16	PBDB + regression	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Ankalagon saurognathus	28250.27	PBDB + regression	
Ankyledon annectens	30.27	(1)	
Anomoemys lewisi	207.64	(9)	
Ansomys hepburnensis	44.70	(1)	
Ansomys nevadensis	51.94	(1)	
Ansomys nexodens	92.85	PBDB + regression	
Antecalomys phtharus	22.87	(1)	*
Antecalomys valensis	13.60	(1)	*
Antecalomys vasquezi	10.70	PBDB	*
Antiacodon pygmaeus	464.26	PBDB + regression	
Antiacodon venustus	2156.43	PBDB + regression	
Apataelurus kayi	10833.16	PBDB + regression	
Apatemys bellulus	17.36	PBDB + regression	*
Apatemys bellus	21.80	PBDB + regression	*
Apatemys chardini	14.63	PBDB + regression	*
Apatemys downsi	65.02	PBDB + regression	*
Apatemys hendryi	12.08	PBDB + regression	*
Apatemys uintensis	28.30	PBDB + regression	*
Apatosciuravus bifax	35.35	PBDB + regression	*
Apatosciuravus jacobsi	29.87	PBDB + regression	*
Apheliscus chydaeus	47.27	PBDB + regression	*
Apheliscus insidiosus	60.38	PBDB + regression	*
Apheliscus nitidus	77.18	PBDB + regression	*
Apheliscus wapitiensis	26.62	PBDB + regression	*
Aphelops malacorrhinus	3541284.24	(1)	
Aphelops megalodus	1689595.99	(1)	
Aphelops mutilus	4325334.34	(1)	
Aphronorus fraudator	112.44	PBDB + regression	
Aphronorus orieli	427.05	PBDB + regression	
Aphronorus ratatoski	176.14	PBDB + regression	
Apletotomeus crassus	8.78	PBDB + regression	*
Apternodus gregoryi	90.14	PBDB + regression	
Apternodus iliffensis	87.48	PBDB + regression	
Arapahovius advena	42.74	PBDB + regression	
Archaeocyon falkenbachii	2116.88	(10)	
Archaeocyon leptodus	3533.34	(1)	
Archaeocyon pavidus	2275.60	(1)	
Archaeohippus blackbergi	33189.87	(1)	
Archaeohippus mannulus	48917.80	PBDB + regression	
Archaeohippus mourningi	54176.36	(1)	
Archaeohippus penultimus	71682.36	(1)	
Archaeohippus stenolophus	63678.98	PBDB	
Archaeolagus acaricolus	578.25	(1)	
Archaeolagus emeraldensis	2344.90	(1)	
Archaeolagus ennisianus	1064.22	(1)	
Archaeolagus macrocephalus	1826.21	(1)	
Archaeolagus primigenius	1540.71	(1)	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Archaeotherium lemleyi	1361176.27	PBDB + regression	
Archaeotherium mortoni	240808.54	PBDB + regression	
Archaeotherium trippensis	3353590.86	PBDB + regression	
Arctocyon montanensis	14771.98	PBDB + regression	
Arctocyon mumak	57080.05	PBDB	
Arctodontomys nuptus	318.11	PBDB + regression	
Arctodontomys simplicidens	219.44	PBDB + regression	
Arctodontomys wilsoni	236.68	PBDB + regression	
Arctodus pristinus	299916.25	(11)	
Arctonasua eurybates	15994.50	(1)	
Arctonasua gracilis	8866.19	(1)	
Arctonasua minima	7044.48	(1)	
Arctostylops steini	512.92	PBDB + regression	
Ardynomys occidentalis	202.01	PBDB + regression	
Arfia junnei	1188.60	PBDB + regression	
Arfia opisthotoma	11400.50	PBDB + regression	
Arfia shoshoniensis	9550.20	PBDB + regression	
Arfia zelee	2236.53	PBDB + regression	
Arretotherium acridens	179871.86	(1)	
Arretotherium fricki	138690.48	(1)	
Arretotherium leptodus	252848.32	PBDB	
Artimomys australis	133.09	PBDB + regression	*
Artimomys nocerae	66.71	PBDB + regression	*
Artimomys witteri	91.55	PBDB + regression	*
Astrohippus stockii	134877.06	PBDB	
Aulolithomys bounites	68.53	PBDB + regression	*
Aulolithomys vexillaries	17.97	PBDB + regression	*
Australocamelus orarius	100709.96	(1)	
Auxontodon pattersoni	6261.76	PBDB + regression	
Avunculus didelphodonti	60.38	PBDB + regression	*
Aycrossia lovei	124.23	PBDB + regression	
Aztlanolagus agilis	1999.86	(11)	
Azygonyx ancylion	15969.85	PBDB + regression	
Azygonyx grangeri	24602.41	PBDB + regression	
Azygonyx xenicus	7316.20	PBDB + regression	
Baioconodon denverensis	4195.64	PBDB + regression	
Baioconodon nordicus	1675.41	PBDB + regression	
Baiomys rexroadii	7.29	PBDB + regression	*
Baiotomeus douglassi	192.03	PBDB + regression	
Baiotomeus rhotonion	12.82	PBDB + regression	*
Barbourofelis fricki	255250.32	(1)	
Barbourofelis loveorum	160091.76	PBDB + regression	
Barbourofelis morrisoni	90219.42	(1)	
Barbourofelis osborni	162309.29	(12)	
Barbourofelis whitfordi	77652.58	(1)	
Barbourofelis trigonocorneus	33860.35	(1)	
Barylambda faberi	255787.00	PBDB + regression	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Barylambda jackwilsoni	43914.63	PBDB + regression	
Basirepomys pliogenicus	72.36	PBDB + regression	
Basirepomys robertsi	54.13	PBDB + regression	
Bassariscus antiquus	1881.83	(1)	
Bassariscus casei	1652.43	(1)	
Bassariscus minimus	1183.06	(13)	
Bassariscus ogallalae	1724.26	(14)	
Bassariscus parvus	1685.81	(1)	
Bathygenys alpha	6155.81	PBDB + regression	
Bathygenys reevesi	5297.18	PBDB + regression	
Batodonoides powayensis	3.14	PBDB + regression	
Batodonoides vanhouteni	1.26	PBDB + regression	
Beckiasorex hibbardi	6.56	PBDB + regression	
Bensonomys arizonae	23.19	PBDB	*
Bensonomys baskini	26.95	PBDB	*
Bensonomys elachys	8.78	(15)	*
Bensonomys gidleyi	13.90	PBDB	*
Bensonomys lindsayi	8.78	PBDB + regression	*
Bensonomys meadensis	19.00	PBDB	*
Bensonomys winklerorum	9.09	PBDB	*
Bensonomys yazhi	9.98	(16)	*
Betonnia tsosia	50.22	(17)	
Bisonalveus browni	90.14	PBDB + regression	*
Bisonalveus holtzmani	146.12	PBDB + regression	*
Blacktops latidens	344.57	PBDB	
Blacktops longinares	255.48	PBDB	
Blarina brevicauda	16.40	PBDB	
Blarina carolinensis	13.49	(11)	
Blastomeryx gemmifer	10938.02	(1)	
Blastomeryx pristinus	38955.58	PBDB	
Blickomylus galushai	16983.54	(1)	
Boreameryx braskerudi	9643.88	PBDB + regression	
Borophagus diversidens	34891.55	(1)	
Borophagus dudleyi	94433.22	(18)	
Borophagus hilli	29143.87	(1)	
Borophagus littoralis	23388.51	(1)	
Borophagus orc	16814.55	(1)	
Borophagus parvus	19341.34	(1)	
Borophagus pugnator	24100.79	(1)	
Borophagus secundus	24100.79	(1)	
Bothriodon rostratus	865704.50	(19)	
Bouromeryx americanus	68186.37	(1)	
Bouromeryx submilleri	50011.09	(1)	
Brachycrus buwaldi	250196.03	(1)	
Brachycrus laticeps	359952.66	PBDB	
Brachycrus rusticus	117343.54	PBDB	
Brachycrus siouense	145801.30	(1)	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Brachyerix hibbardii	78.19	(20)	
Brachyerix incertis	79.84	(1)	
Brachyerix macrotis	131.63	(1)	
Brachyerix richi	340.36	(1)	
Brachyhyops viensis	202519.16	PBDB + regression	
Brachyhyops wyomingensis	97111.99	PBDB + regression	
Brachypsalis modicus	512.86	(1)	
Brachypsalis obliquidens	63169.09	PBDB	*
Brachypsalis pachycephalus	487.85	(1)	
Brachyrhynchocyon dodgei	13906.88	PBDB + regression	
Brachyrhynchocyon montanus	7397.01	PBDB + regression	
Brontops tyleri	571500.00	PBDB	*
Buisnictis breviramis	849.04	PBDB + regression	
Buisnictis burrowsi	817.07	PBDB	
Buisnictis schoffi	22.42	(1)	*
Bunomeryx montanus	3196.73	PBDB + regression	
Bunophorus etsagicus	13323.34	PBDB + regression	
Bunophorus grangeri	13969.78	PBDB + regression	
Bunophorus macropternus	10378.10	PBDB + regression	
Bunophorus pattersoni	6332.74	(21)	
Bunophorus robustus	5163.91	PBDB + regression	
Bunophorus sinclairi	16312.82	PBDB + regression	
Caenolambda jepsoni	40906.63	PBDB + regression	
Calippus cerasinus	81633.91	(1)	
Calippus elachistus	43044.94	(1)	
Calippus hondurensis	71682.36	(1)	
Calippus martini	119372.01	(1)	
Calippus placidus	79221.26	(1)	
Calippus proplacidus	64860.88	(1)	
Calippus regulus	45251.90	(1)	
Camelops hesternus	1099005.84	(11)	
Camelops traviswhitei	1027000.94	PBDB + regression	
Campestrallomys annectens	80.29	PBDB + regression	
Campestrallomys dawsonae	298.87	(1)	
Campestrallomys siouxensis	159.17	(1)	
Canis armbrusteri	30333.26	(1)	
Canis edwardii	79873.95	PBDB + regression	
Canis latrans	11765.00	PBDB	
Canis lepophagus	14617.87	(1)	
Canis rufus	15566.00	PBDB	
Cantius abditus	2798.04	PBDB + regression	
Cantius angulatus	417.80	PBDB + regression	
Cantius frugivorus	913.71	PBDB + regression	
Cantius mckennai	902.97	PBDB + regression	
Cantius nunienus	1212.97	PBDB + regression	
Cantius ralstoni	738.98	PBDB + regression	
Cantius simonsi	3858.47	PBDB + regression	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Cantius torresi	410.27	PBDB + regression	
Cantius trigonodus	2000.00	(22)	
Capricamelus gettyi	361557.35	PBDB + regression	
Capromeryx tauntonensis	15835.35	(1)	
Cardiophus radinskyi	32305.76	PBDB + regression	
Cardiophus semihians	33364.14	PBDB + regression	
Carpocristes cygneus	25.80	PBDB + regression	*
Carpocristes hobackensis	33.00	(22)	*
Carpocyon compressus	15214.44	(1)	
Carpocyon robustus	19341.34	(1)	
Carpocyon webbi	20537.34	(1)	
Carpodaptes hazelae	51.17	PBDB + regression	
Carpodaptes stonleyi	32.59	PBDB + regression	
Carpolestes nigridens	87.00	(23)	
Carpolestes simpsoni	27.99	PBDB + regression	
Carpomegodon jepseni	166.29	PBDB + regression	
Catopsalis alexanderi	3415.85	PBDB + regression	
Catopsalis calgariensis	22815.78	PBDB + regression	
Catopsalis foliatus	7371.53	PBDB + regression	
Catopsalis joyneri	2435.00	(7)	
Cedromus wardi	246.28	PBDB + regression	
Centetodon aztecus	17.36	PBDB + regression	
Centetodon bembicophagus	10.87	PBDB + regression	
Centetodon chadronensis	23.37	PBDB + regression	
Centetodon divaricatus	30.57	(1)	
Centetodon hendryi	17.36	PBDB + regression	
Centetodon kuenzii	26.62	PBDB + regression	
Centetodon magnus	33.45	(1)	
Centetodon neashami	53.67	PBDB + regression	
Centetodon pulcher	30.03	PBDB + regression	
Centimanomys major	239.72	PBDB + regression	
Ceratogaulus hatcheri	1490.63	(19)	
Cernictis hesperus	177.68	(1)	*
Cernictis repenningi	8800.69	(24)	
Chacomylus sladei	151.65	PBDB + regression	*
Chadrolagus emryi	63.45	PBDB + regression	*
Chalicomomys willwoodensis	4.06	PBDB + regression	*
Chasmaporthetes ossifragus	107821.85	PBDB + regression	
Chipetaia lamporea	417.80	PBDB + regression	
Chiromyoides caesor	219.44	PBDB + regression	*
Chiromyoides minor	70.04	PBDB + regression	*
Chiromyoides potior	202.80	PBDB + regression	*
Chriacus badgleyi	1200.76	PBDB + regression	
Chriacus baldwini	1550.07	PBDB + regression	
Chriacus gallinae	1468.97	PBDB + regression	
Chriacus pelvidens	5047.26	PBDB + regression	
Chumashius balchi	111.45	PBDB + regression	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Churcheria baroni	50.76	PBDB + regression	*
Cimexomys minor	27.99	PBDB + regression	*
Cimolestes incisus	204.60	PBDB + regression	
Colodon cingulatus	222816.55	PBDB	
Colodon kayi	49060.48	PBDB + regression	
Colodon occidentalis	110573.45	PBDB + regression	
Colodon stovalli	57498.66	PBDB + regression	
Colodon woodi	85748.60	PBDB + regression	
Conacodon cophater	236.68	PBDB + regression	*
Conacodon delphae	3318.67	PBDB + regression	
Conacodon entoconus	2268.93	PBDB + regression	
Conacodon kohlbergeri	590.00	PBDB + regression	*
Conoryctes comma	16724.87	PBDB + regression	
Copecion brachypternus	4501.11	PBDB + regression	
Copecion davisii	2798.04	PBDB + regression	
Copedelphys innominata	23.70	PBDB + regression	
Copedelphys titanelix	6.11	PBDB + regression	*
Copelemur australotutus	1633.14	PBDB + regression	
Copelemur tutus	1864.20	PBDB + regression	
Copemys barstowensis	32.14	(1)	
Copemys esmeraldensis	27.94	(1)	
Copemys lindsayi	14.88	(1)	
Copemys longidens	26.84	(1)	
Copemys loxodon	28.79	(1)	
Copemys mariae	31.50	(1)	
Copemys pagei	15.18	(1)	
Copemys russelli	24.29	(1)	
Copemys shotwelli	10.39	PBDB + regression	
Copemys tenuis	23.34	(1)	
Coriphagus encinensis	254.29	PBDB + regression	
Coriphagus montanus	130.39	PBDB + regression	
Cormocyon copei	4817.45	(1)	
Cormocyon haydeni	4359.01	(1)	
Coryphodon armatus	351055.71	PBDB + regression	
Coryphodon eocaenus	218518.57	PBDB + regression	
Coryphodon lobatus	570461.25	PBDB + regression	
Coryphodon proterus	479331.19	PBDB + regression	
Coryphodon radians	339220.51	PBDB + regression	
Cosoryx cerroensis	16814.55	(1)	
Cosoryx furcatus	13678.75	PBDB	
Cranioceras clarendonensis	89936.76	PBDB + regression	
Cranioceras teres	96761.07	(1)	
Cranioceras unicornis	134591.56	(1)	
Cratogeomys sansimonensis	140.29	PBDB + regression	
Crucimys milleri	36.60	(1)	*
Crypholestes vughni	18.68	PBDB	
Cryptotis adamsi	13.33	(1)	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Cryptotis kansasensis	33.60	PBDB + regression	
Cryptotis parva	4.10	PBDB	
Cupidinimus avawatzensis	20.09	(1)	
Cupidinimus bidahochiensis	27.39	(1)	
Cupidinimus boronensis	14.59	(1)	
Cupidinimus eurekaensis	2.98	PBDB	
Cupidinimus halli	10.39	PBDB + regression	
Cupidinimus lindsayi	7.61	(1)	
Cupidinimus madisonensis	10.56	PBDB	
Cupidinimus magnus	22.41	PBDB + regression	
Cupidinimus nebraskensis	9.30	(1)	
Cupidinimus prattensis	21.33	(1)	
Cupidinimus tertius	16.44	(1)	
Cupidinimus whitlocki	16.78	(1)	
Cuvieronius tropicus	56818220.68	PBDB + regression	
Cuyamalagus dawsoni	639.06	(1)	
Cylindrodon fontis	88.57	PBDB + regression	
Cylindrodon nebraskensis	167.14	PBDB + regression	
Cynarctoides acridens	2921.93	(1)	
Cynarctoides gawnae	2643.87	(1)	
Cynarctoides harlowi	1863.11	(1)	
Cynarctoides lemur	2321.57	(1)	
Cynarctoides luskensis	2392.27	(1)	
Cynarctoides roii	1826.21	(1)	
Cynarctus crucidens	4964.16	(1)	
Cynarctus galushai	9228.02	(1)	
Cynarctus saxatilis	10097.06	(1)	
Cynelos caroniavorus	16647.24	(1)	
Cynelos idoneus	105873.47	(1)	
Cynelos sinapius	213202.99	(1)	
Cynodesmus martini	14185.85	(1)	
Cynodesmus thooides	9228.02	(1)	
Cynorca occidentale	20537.34	(1)	
Cynorca sociale	34624.09	PBDB + regression	
Cyriacotherium psamminum	3551.95	PBDB	
Dakotallomys lillegraveni	196.53	PBDB	
Dakotallomys pelycomyoides	244.01	(25)	
Daphoenodon falkenbachii	137310.49	(1)	
Daphoenodon notionastes	43477.55	(1)	
Daphoenodon superbus	77652.58	(1)	
Daphoenus hartshornianus	13329.17	PBDB + regression	
Daphoenus lambei	7397.01	PBDB + regression	
Daphoenus ruber	12767.60	PBDB + regression	
Daphoenus socialis	13000.00	(4)	
Daphoenus vetus	19535.72	(1)	
Dartinius jepseni	10.52	(26)	*
Dasypus bellus	44977.99	(11)	*
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Delahomeryx browni	38948.67	(1)	
Desmatippus avus	179871.86	(1)	
Desmatippus texanus	102452.28	PBDB	
Desmatochoerus hesperus	239142.20	(27)	
Desmatochoerus megalodon	335100.00	(4)	
Desmatoclaenus hermaeus	11400.50	PBDB + regression	
Desmatolagus schizopetrus	198.46	PBDB	*
Desmocyon matthewi	8103.08	(1)	
Desmocyon thomsoni	6974.39	(1)	
Diacocherus meizon	23.70	PBDB + regression	
Diacocherus minutus	45.48	PBDB + regression	
Diacodexis gracilis	788.63	PBDB + regression	
Diacodexis kelleyi	1550.07	PBDB + regression	
Diacodexis metsiacus	1176.50	PBDB + regression	
Diacodexis minutus	555.14	PBDB + regression	
Diacodexis primus	1389.84	PBDB + regression	
Diacodexis secans	2124.77	PBDB + regression	
Diacodon alticuspis	324.82	PBDB + regression	
Diceratherium annectens	864580.76	(1)	*
Diceratherium armatum	3541284.24	(1)	*
Diceratherium gregorii	946518.90	PBDB + regression	*
Diceratherium niobrarensense	2105366.25	(1)	*
Diceratherium tridactylum	965112.54	(1)	*
Didelphodus absarokae	361.10	PBDB + regression	
Didelphodus altidens	246.37	PBDB + regression	
Didelphodus rheos	139.74	PBDB + regression	
Didelphodus serus	133.48	PBDB + regression	
Didymictis altidens	30566.06	PBDB	*
Didymictis leptomyus	3213.72	PBDB + regression	
Didymictis protenus	7205.96	PBDB + regression	
Didymictis proteus	3605.48	PBDB + regression	
Didymictis vancleveae	65421.88	(28)	*
Dikomys matthewi	47.47	(1)	
Dillerlemur pagei	133.09	PBDB + regression	
Dilophodon destitutus	369866.51	(29)	*
Dilophodon minusculus	27074.75	PBDB + regression	
Dinaelurus crassus	37320.00	(4)	
Dinofelis palaeoonca	70032.50	PBDB + regression	
Dinohippus interpolatus	257815.63	(1)	
Dinohippus leardi	392385.48	(1)	
Dinohippus leidyanus	229900.00	(30)	
Dinohippus mexicanus	609259.77	(1)	*
Dinohippus spectans	536500.00	(4)	*
Dinohyus hollandi	2032979.00	PBDB + regression	*
Diplobunops matthewi	100751.34	PBDB + regression	
Dipodomys compactus	49.20	(11)	
Dipodomys gidleyi	17.97	PBDB + regression	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Dipodomys hibbardi	17.81	(1)	
Diprionomys agrarius	29.87	PBDB + regression	
Diprionomys parvus	11.00	(4)	
Dipsalidictis aequidens	42263.45	PBDB + regression	*
Dipsalidictis platypus	8936.27	PBDB + regression	
Dipsalidictis transiens	22310.00	PBDB + regression	
Dipsalodon churchillorum	26647.76	PBDB + regression	
Dipsalodon matthewi	66505.41	PBDB + regression	
Dissacus navaiovius	6299.67	PBDB + regression	
Dissacus praenuntius	14804.22	PBDB + regression	
Domnina dakotensis	28.50	(1)	
Domnina gradata	36.60	(1)	
Domnina greeni	33.78	(1)	
Domnina thompsoni	20.28	PBDB + regression	
Domninoides hessei	149.90	(1)	
Domninoides knoxjonesi	31.40	PBDB	
Domninoides mimicus	135.64	(1)	
Domninoides riparensis	56.83	(1)	
Dorraletes diminutivus	37.32	PBDB + regression	
Douglassciurus jeffersoni	360.63	(25)	
Downsimus chadwicki	56.26	(1)	
Drepanomeryx falciformis	90219.42	(1)	
Dromomeryx borealis	144350.55	(1)	
Dryomomys dulcifer	4.58	(31)	
Dryomomys szalayi	6.07	(31)	
Duchesneodus uintensis	2406372.12	PBDB + regression	
Dyseohyus fricki	21807.30	(1)	
Dyseolemur pacificus	70.04	PBDB + regression	
Ectocion cedrus	4839.14	PBDB + regression	
Ectocion collinus	5869.11	PBDB + regression	
Ectocion major	12433.55	PBDB + regression	
Ectocion mediotuber	5451.18	PBDB + regression	
Ectocion osbornianus	6800.01	PBDB + regression	
Ectocion parvus	3109.34	PBDB + regression	
Ectocion superstes	13800.02	PBDB + regression	
Ectoconus ditrigonus	22355.77	PBDB + regression	
Ectoganus gliriformes	51205.04	(31)	
Ectoganus gliriformis	51205.04	PBDB + regression	
Ectopocynus antiquus	8266.78	(1)	
Ectopocynus intermedius	12456.53	(1)	
Ectypodus aphronorus	18.00	(7)	
Ectypodus childei	14.42	PBDB + regression	
Ectypodus lovei	14.42	PBDB + regression	
Ectypodus musculus	30.25	PBDB + regression	
Ectypodus powelli	19.74	PBDB + regression	
Ectypodus szalayi	17.88	PBDB + regression	
Ectypodus tardus	16.11	PBDB + regression	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Edworthia lerbekmoi	23.70	PBDB + regression	
Ekgmowechashala philotau	2079.74	(1)	
Elomeryx armatus	157944.66	(1)	
Elphidotarsius florencae	17.88	PBDB + regression	*
Elphidotarsius russelli	23.70	PBDB + regression	*
Elphidotarsius wightoni	27.99	PBDB + regression	*
Elpidophorus elegans	829.40	PBDB + regression	
Elpidophorus minor	151.65	PBDB + regression	*
Elwynella oreas	99.30	PBDB + regression	
Elymys complexus	5.92	PBDB + regression	*
Enhydritherium terraenovae	22180.76	PBDB + regression	
Enhydrocyon basilatus	20332.99	(1)	
Enhydrocyon crassidens	18582.95	(1)	
Enhydrocyon pahinsintewakpa	14764.78	(1)	
Enhydrocyon stenocephalus	14044.69	(1)	
Entoptychus grandiplanus	59.74	(1)	*
Entoptychus individens	84.00	(4)	*
Entoptychus planifrons	134.29	(1)	*
Entoptychus sheppardi	94.63	(1)	*
Entoptychus wheelerensis	84.00	(4)	
Eoconodon gaudrianus	3093.31	(32)	
Eoconodon hutchisoni	9450.73	PBDB	
Eoconodon nidhoggi	1665.06	PBDB + regression	
Eohaplomys serus	1536.44	PBDB + regression	
Eohaplomys tradux	953.63	PBDB + regression	
Eomoropus amarorum	772.04	PBDB + regression	
Eoryctes melanus	67651.40	PBDB + regression	
Eotitanops borealis	53.67	PBDB + regression	
Eotitanops minimus	240072.90	PBDB + regression	
Eotitanops gaudrianus	43277.45	PBDB + regression	
Eotitanotherium osborni	1484895.52	PBDB	
Eotylopus reedi	38563.77	PBDB + regression	*
Epeiromys spanius	101.65	PBDB + regression	
Epicyon haydeni	41772.77	(1)	
Epicyon saevus	27722.51	(1)	
Epihippus gracilis	18366.29	PBDB + regression	
Epihippus intermedius	21835.02	PBDB	
Epitriplopus uintensis	32600.00	(30)	
Eporeodon occidentalis	118300.00	(4)	
Equus complicatus	399944.75	(11)	
Equus conversidens	306196.34	(11)	
Equus cumminsii	314354.39	PBDB + regression	
Equus francisci	217178.22	PBDB + regression	
Equus fromaninus	172311.00	(4)	
Equus giganteus	399944.75	(11)	
Equus idahoensis	629100.30	PBDB + regression	
Equus leidy	291150.23	PBDB + regression	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
<i>Equus occidentalis</i>	574116.46	(11)	
<i>Equus scotti</i>	554625.71	(11)	
<i>Equus simplicidens</i>	296558.57	(1)	
<i>Eremotherium eomigrans</i>	2584400.00	(33)	
<i>Eremotherium laurillardi</i>	799834.26	(11)	
<i>Erethizon bathygnathum</i>	9163.63	PBDB + regression	
<i>Erethizon kleini</i>	3854.02	PBDB + regression	
<i>Escavadodon zygus</i>	137.63	PBDB + regression	
<i>Esthonyx acutidens</i>	7159.09	PBDB + regression	
<i>Esthonyx bisulcatus</i>	3066.57	PBDB + regression	
<i>Esthonyx spatularius</i>	4505.96	PBDB + regression	
<i>Eucyon davisi</i>	10509.13	(1)	
<i>Eudaemonema cuspidata</i>	529.62	PBDB + regression	
<i>Eumys brachyodus</i>	126.47	(1)	
<i>Eumys elegans</i>	106.19	PBDB + regression	
<i>Euoplocyon brachygnathus</i>	11271.13	(1)	
<i>Euoplocyon spissidens</i>	9798.65	(1)	
<i>Eusmilus cerebrealis</i>	804.32	(1)	*
<i>Eusmilus sicarius</i>	34789.94	PBDB + regression	*
<i>Eutypomys acares</i>	84.39	PBDB + regression	
<i>Eutypomys hibernodus</i>	729.27	PBDB + regression	
<i>Eutypomys inexpectatus</i>	708.27	PBDB + regression	
<i>Eutypomys montanensis</i>	943.88	(1)	
<i>Eutypomys obliquidens</i>	202.01	PBDB + regression	
<i>Eutypomys parvus</i>	273.26	PBDB + regression	
<i>Eutypomys thomsoni</i>	578.37	PBDB + regression	
<i>Fanimus clasoni</i>	87.14	PBDB	
<i>Fanimus ultimus</i>	164.02	(1)	
<i>Felis rexroadensis</i>	30333.26	(1)	*
<i>Ferinestrix vorax</i>	29333.85	PBDB	
<i>Florentiamys agnewi</i>	84.77	(1)	
<i>Florentiamys kinseyi</i>	157.59	(1)	
<i>Florentiamys loomisi</i>	151.41	(1)	
<i>Florentiamys tiptoni</i>	117.92	(1)	
<i>Floridachoerus olseni</i>	35596.41	(1)	
<i>Floridameryx floridanus</i>	8184.52	(1)	
<i>Floridatragulus dolichanthereus</i>	43477.55	(1)	
<i>Floridatragulus texanus</i>	61083.68	(1)	
<i>Fouchia elyensis</i>	10126.74	PBDB + regression	
<i>Galbreathia bettae</i>	165.67	(1)	
<i>Galbreathia novellus</i>	271.54	PBDB	
<i>Galecyon mordax</i>	1984.90	PBDB + regression	
<i>Gazinius amplus</i>	875.00	(22)	
<i>Gazinocyon vulpeculus</i>	5070.63	PBDB + regression	
<i>Gelastops joni</i>	183.10	PBDB + regression	
<i>Gelastops parvus</i>	149.35	PBDB + regression	
<i>Geomys carranzai</i>	29.87	PBDB + regression	*
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Geringia gloveri	26.84	(1)	
Geringia mcgregori	41.26	(1)	
Gigantocamelus spatulus	2615036.35	PBDB + regression	*
Glossotherium chapadmalense	310540.00	(33)	*
Glyptotherium arizonae	789680.00	(33)	
Gomphotherium obscurum	50047676.55	PBDB	
Gomphotherium osborni	24506452.87	(34)	
Goniodontomys disjunctus	44.26	(1)	
Gracilocyon winkleri	690.80	PBDB + regression	
Grangeria anarsius	65434.40	PBDB + regression	
Gregorymys curtus	106.70	(1)	
Gregorymys formosus	77.48	(1)	
Gregorymys riograndensis	43.82	(1)	
Gripholagomys lavocati	507.76	(1)	
Griphomys alecer	15.90	PBDB + regression	
Griphomys toltecus	25.61	(25)	
Guanajuatomys hibbardi	167.14	PBDB + regression	
Guildayomys hibbardi	82.27	(1)	
Hapalodectes anthracinus	352.26	PBDB + regression	
Hapalodectes leptognathus	617.19	PBDB + regression	
Haplaletes disceptatrix	84.86	PBDB + regression	
Haplaletes pelicatus	130.39	PBDB + regression	
Haploconus angustus	1200.76	PBDB + regression	
Haplohippus texanus	23265.89	PBDB + regression	
Haplolambda quinni	53092.09	PBDB	
Haplolambda simpsoni	138271.36	(35)	
Haplomylus bozemanensis	87.48	PBDB + regression	
Haplomylus palustris	72.22	PBDB + regression	
Haplomylus scottianus	115.36	PBDB + regression	
Haplomylus simpsoni	162.53	PBDB + regression	
Haplomylus speirianus	98.28	PBDB + regression	
Haplomys galbreathi	38.23	PBDB + regression	
Haplomys liolophus	39.00	(4)	
Harpagolestes leotensis	138880.62	PBDB + regression	
Harpagolestes uintensis	106686.23	PBDB + regression	
Harrymys irvini	83.93	(1)	
Harrymys magnus	50.40	(1)	
Harrymys woodi	43.52	(15)	
Heliscomys hatcheri	7.19	(7)	
Heliscomys ostranderi	3.56	PBDB + regression	
Heliscomys senex	4.67	PBDB + regression	
Heliscomys vetus	4.67	PBDB + regression	
Heliscomys woodi	10.39	PBDB + regression	
Hemiacodon engardae	538.07	PBDB + regression	
Hemiacodon gracilis	563.76	PBDB + regression	
Hemiauchenia gracilis	157598.86	PBDB + regression	
Hemiauchenia macrocephala	109900.58	(11)	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Hemiauchenia minima	85819.37	(1)	
Hemiauchenia vera	243143.10	PBDB + regression	
Hemipsalodon grandis	436751.47	(36)	
Hemithlaeus harbourae	1283.98	(37)	
Hendryomeryx defordi	5742.28	PBDB	
Hendryomeryx esulcatus	6619.36	PBDB + regression	
Hendryomeryx wilsoni	3001.58	PBDB + regression	
Heptacodon pellionis	88438.62	PBDB + regression	
Heptodon calciculus	26551.76	PBDB + regression	
Herpetotherium fugax	19.74	PBDB + regression	
Herpetotherium knighti	51.17	PBDB + regression	
Herpetotherium merriami	25.80	PBDB + regression	
Herpetotherium valens	57.16	PBDB + regression	
Herpetotherium youngi	40.09	PBDB + regression	
Hesperhys pinensis	68186.37	(1)	
Hesperhys vagrans	73865.41	(1)	
Hesperocyon gregarius	3533.34	(1)	
Hesperolagomys fluviatilis	169.02	(1)	
Hesperolagomys galbreathi	149.90	(1)	
Hesperoscalops mcgrewi	186.62	PBDB + regression	
Heteralestes leotanus	14016.35	PBDB + regression	
Heteromeryx dispar	51072.86	PBDB + regression	
Heteropliohippus hulberti	302549.45	(1)	
Hexacodus pelodes	625.82	PBDB + regression	
Hexameryx simpsoni	30638.11	(1)	
Hexobelomeryx fricki	59621.29	PBDB + regression	
Hibbarderix obfuscatus	33.60	PBDB + regression	
Hibbardomys fayae	61.14	PBDB + regression	
Hibbardomys marthae	84.39	PBDB + regression	
Hibbardomys skinneri	61.14	PBDB + regression	
Hibbardomys voorhiesi	61.14	PBDB + regression	
Hipparion forcei	194852.86	(1)	
Hipparion tehonense	100709.96	(1)	
Hippotherium emsliei	201622.66	PBDB + regression	
Hippotherium ingenuum	109258.44	PBDB + regression	
Hippotherium plicatile	165091.29	PBDB + regression	
Hippotherium quinni	422193.86	PBDB + regression	
Hitonkala macdonalddtau	24.53	(1)	
Holmesina floridanus	68696.59	PBDB + regression	
Homacodon vagans	6691.69	PBDB + regression	
Homogalax protapirinus	19815.58	PBDB + regression	
Homotherium crusafonti	233968.19	PBDB	
Homotherium idahoensis	257900.00	(4)	
Homotherium johnstoni	124571.99	PBDB + regression	
Hoplophoneus mentalis	48420.73	PBDB + regression	
Hoplophoneus primaevus	20243.49	PBDB + regression	
Huerfanodon polecatensis	29749.42	PBDB + regression	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Huerfanodon torreonius	20823.53	PBDB + regression	
Hyaenodon brevirostris	37331.34	PBDB + regression	
Hyaenodon crucians	14771.98	PBDB + regression	
Hyaenodon horridus	91750.41	PBDB + regression	
Hyaenodon montanus	28357.49	PBDB + regression	
Hyaenodon mustelinus	8079.01	PBDB + regression	
Hyaenodon raineyi	1093.34	PBDB + regression	
Hyaenodon venturae	2552.88	PBDB + regression	
Hyaenodon vetus	33333.28	PBDB + regression	
Hylomeryx quadricuspid	4966.19	PBDB + regression	
Hyopsodus fastigatus	1894.05	PBDB + regression	
Hyopsodus lepidus	625.82	PBDB + regression	
Hyopsodus loomisi	488.31	PBDB + regression	
Hyopsodus lysitensis	924.51	PBDB + regression	
Hyopsodus mentalis	1482.35	PBDB + regression	
Hyopsodus minor	440.75	PBDB + regression	
Hyopsodus minusculus	440.75	PBDB + regression	
Hyopsodus paulus	768.59	PBDB + regression	
Hyopsodus paucillius	181.54	PBDB + regression	
Hyopsodus powellianus	1416.00	PBDB + regression	
Hyopsodus simplex	729.22	PBDB + regression	
Hyopsodus tonksi	464.26	PBDB + regression	
Hyopsodus uintensis	1495.78	PBDB + regression	
Hyopsodus walcottianus	6172.52	PBDB + regression	
Hyopsodus wortmani	798.73	PBDB + regression	
Hypertragulus calcaratus	8880.00	(4)	
Hypertragulus hesperius	4572.00	(4)	
Hypohippus affinis	442413.39	(1)	
Hypohippus equinus	271034.12	(1)	
Hypohippus osborni	299539.03	(1)	
Hypolagus edensis	665.14	(1)	
Hypolagus fontinalis	1211.97	(1)	
Hypolagus furlongi	678.58	(1)	
Hypolagus gidleyi	1998.20	(1)	
Hypolagus oregonensis	2344.90	(1)	
Hypolagus parviplicatus	1702.75	(1)	
Hypolagus ringoldensis	319.00	(4)	
Hypolagus vetus	2892.86	(1)	
Hypolagus voorhiesi	319.00	(4)	
Hypslops bannackensis	146895.45	(38)	
Hypslops breviceps	156373.08	(1)	
Hyrachyus affinis	111138.67	PBDB + regression	
Hyrachyus eximius	198513.08	PBDB + regression	
Hyrachyus modestus	217770.66	PBDB + regression	
Hyracodon leidyanus	459564.25	PBDB + regression	
Hyracodon medius	102488.96	PBDB + regression	
Hyracodon nebraskensis	211081.59	(1)	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Hyracodon petersoni	313951.52	PBDB + regression	
Hyracodon priscidens	351463.36	PBDB + regression	
Hyracotherium cristatum	23898.63	PBDB	*
Hyracotherium vasaccense	24900.00	(30)	*
Ictidopappus mustelinus	354.83	PBDB + regression	
Ignacius fremontensis	19.74	PBDB + regression	*
Ignacius frugivorus	73.44	PBDB + regression	
Ignacius graybullianus	128.62	PBDB + regression	
Indarctos nevadensis	376215.79	PBDB + regression	
Indarctos oregonensis	302549.45	(1)	
Ischyrocyon gidleyi	282095.23	(1)	
Ischyromys typus	761.25	PBDB + regression	
Ischyromys veterior	477.49	PBDB + regression	
Jacobsomys verdensis	50.91	(1)	
Janimus dawsonae	17.97	PBDB + regression	*
Jaywilsonomys ojinagaensis	895.10	PBDB + regression	
Jemezium szalaii	95.39	PBDB + regression	
Jepsenella praepropera	18.80	PBDB + regression	*
Jimomys labaughi	69.41	(1)	
Jimomys lulli	28.00	(4)	
Kansasimys dubius	135.64	(1)	
Kansasimys wilsoni	228.43	(39)	
Kimbetohia mziae	72.00	(7)	
Knightomys cremneus	27.28	PBDB + regression	
Knightomys cuspidatus	48.29	PBDB	
Knightomys depressus	64.79	PBDB + regression	
Knightomys huerfanensis	135.17	PBDB + regression	
Knightomys minor	27.28	PBDB + regression	
Knightomys reginensis	10.39	PBDB + regression	
Knightomys senior	44.30	PBDB + regression	
Kolponomos clallamensis	103303.51	(40)	
Kolponomos newportensis	876418.72	(41)	*
Kryptoceras amatorum	369534.73	(1)	
Labidolemur kayi	33.60	PBDB + regression	
Labidolemur serus	67.38	PBDB + regression	
Labidolemur soricoides	14.63	PBDB + regression	
Lambdotherium popoagicum	29620.91	PBDB + regression	
Lambertocyon eximius	6045.26	PBDB + regression	
Lambertocyon ischyryus	2015.61	PBDB + regression	
Lanthanotherium sawini	90.14	PBDB + regression	
Laredochoerus edwardsi	5523.91	PBDB + regression	
Laredomys riograndensis	5.92	PBDB + regression	*
Leidymys cerasus	41.68	(1)	
Leidymys korthi	35.35	PBDB + regression	
Leipsanolestes siegfriedti	26.62	PBDB + regression	
Lemoynea biradicularis	45.60	(1)	
Lepoides lepoides	3640.95	(1)	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Leptacodon munusculum	6.56	PBDB + regression	
Leptacodon packi	14.63	PBDB + regression	
Leptacodon tener	8.61	PBDB + regression	
Leptarctus mummorum	8673.78	PBDB + regression	
Leptarctus oregonensis	2580.00	(4)	
Leptarctus primus	149.90	(1)	*
Leptarctus supremus	7725.15	PBDB	
Leptauchenia decora	20130.67	(1)	
Leptauchenia major	30946.03	(1)	
Leptictis dakotensis	644.52	PBDB + regression	
Leptochoerus elegans	8623.90	PBDB + regression	
Leptochoerus spectabilis	9021.94	PBDB + regression	
Leptochoerus supremus	19397.68	PBDB + regression	
Leptocyon mollis	3300.00	(4)	
Leptocyon vafer	5377.61	(1)	
Leptodontomys douglassi	4.67	PBDB + regression	*
Leptodontomys stirtoni	7.32	(42)	*
Leptolambda schmidtii	90362.43	(43)	
Leptomeryx blacki	4578.72	PBDB + regression	
Leptomeryx elissae	6511.38	PBDB + regression	
Leptomeryx evansi	9426.05	PBDB + regression	
Leptomeryx mammifer	18828.04	PBDB + regression	
Leptomeryx speciosus	9223.24	PBDB + regression	
Leptomeryx yoderi	10716.49	PBDB + regression	
Leptoreodon edwardsi	13277.57	PBDB + regression	
Leptoreodon leptolophus	9223.24	PBDB + regression	
Leptoreodon major	32615.84	PBDB + regression	
Leptoreodon marshi	20660.42	PBDB + regression	
Leptoreodon pusillus	3957.21	PBDB + regression	
Leptoreodon stocki	20980.32	PBDB + regression	
Leptoromys wilsoni	110.81	PBDB + regression	
Leptotomus caryophilus	872.14	PBDB + regression	
Leptotomus leptodus	2852.74	PBDB + regression	
Leptotomus parvus	941.80	PBDB + regression	
Leptotragulus clarki	5364.24	PBDB + regression	
Leptotragulus medius	13323.34	PBDB + regression	
Leptotragulus proavus	11797.49	PBDB + regression	
Lepus californicus	2288.00	PBDB	
Lignimus austridakotensis	14.88	(1)	
Lignimus montis	38.23	PBDB + regression	
Limaconyssus habrus	18.80	PBDB + regression	
Limnoecus niobrarensis	7.17	(1)	
Limnoecus tricuspis	5.10	(1)	
Liodontia alexandrae	198.34	(1)	
Litaletes disjunctus	681.34	PBDB + regression	
Litocherus lacunatus	84.86	PBDB + regression	*
Litocherus notissimus	37.32	PBDB + regression	*
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Litocherus zygeus	55.87	PBDB + regression	*
Litolagus molidens	103.28	PBDB + regression	*
Litolestes ignotus	18.80	PBDB + regression	*
Litomylus dissentaneus	124.29	PBDB + regression	
Litomylus orthronepius	115.36	PBDB + regression	
Litoyoderimys auogoleus	47.48	PBDB + regression	
Longirostromeryx clarendonensis	13226.80	(1)	
Longirostromeryx wellsii	17500.77	(1)	
Lophiparamys debequensis	29.87	PBDB + regression	*
Lophiparamys murinus	88.57	PBDB + regression	*
Loveina minuta	45.48	PBDB + regression	
Loveina zephyri	66.71	PBDB + regression	
Loxolophus crisswelli	2140.57	PBDB + regression	
Loxolophus hyattianus	1984.90	PBDB + regression	
Loxolophus pentacus	14847.99	PBDB + regression	
Loxolophus priscus	3899.92	PBDB + regression	
Loxolophus schizophrenus	881.66	PBDB + regression	
Loxolophus spiekeri	18323.92	PBDB + regression	
Lutravus halli	454.86	(1)	
Lycophocyon hutchisoni	4865.03	PBDB + regression	
Lynx proterolyncis	15677.78	(1)	
Lynx rufus	10482.00	PBDB	
Machaeromeryx gilchristensis	4536.90	(1)	
Machaeromeryx tragulus	4536.90	(1)	
Macrocranion junnei	15.97	PBDB + regression	
Macrocranion nitens	33.60	PBDB + regression	
Macrogenis crassigenis	106737.50	PBDB	
Macrogathomys gemmacolis	5.92	PBDB + regression	
Macrogathomys nanus	5.16	(1)	
Macrotarsius montanus	1152.46	PBDB + regression	
Macrotarsius roederi	1640.00	(22)	
Macrotarsius siegerti	1188.60	PBDB + regression	
Mahgarita stenseni	358.28	(44)	
Malaquiferus tourteloti	14816.10	PBDB + regression	
Mammacyon obtusidens	70262.96	(1)	
Mammut americanum	4528975.80	(11)	
Mammut cosoensis	29076021.42	(45)	
Mammut furlongi	29535033.05	PBDB + regression	*
Mammuthus columbi	7998342.55	(11)	
Mammut raki	41795334.69	PBDB + regression	*
Marmota korthi	2038.56	(1)	
Marmota vetus	658.52	(1)	
Martes gazini	1767.00	(4)	
Martes parviroba	5831.67	(46)	
Martinogale alveodens	17.99	(1)	*
Mattimys kalicola	32.56	PBDB + regression	
Megacamelus merriami	1905014.16	(1)	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Megadelphus lundeliusi	3614.01	PBDB + regression	
Megahippus matthewi	882046.45	(1)	*
Megalagus abaconis	1118.79	(1)	
Megalagus brachyodon	373.57	PBDB + regression	
Megalagus primitivus	3165.29	(1)	
Megalagus turgidus	3071.74	(1)	
Megalesthyonx hopsoni	15975.00	(47)	
Megalictis ferox	1587.63	(1)	*
Megalictis frazieri	33591.60	PBDB	
Megalonyx curvidens	185050.00	(33)	
Megalonyx leptostomus	279404.72	PBDB + regression	
Megalonyx wheatleyi	252445.15	PBDB + regression	
Megantereon hesperus	67507.91	(1)	
Megapeomys bobwilsoni	411.58	(1)	
Megasminthus tiheni	55.70	(1)	
Megatylopus cochranii	884486.95	PBDB + regression	
Megatylopus matthewi	1383324.20	(1)	
Megatylopus primaevus	884295.95	PBDB + regression	
Meniscomys hippodus	69.41	(1)	
Meniscomys uhtoffi	70.00	(4)	
Meniscotherium chamense	17413.77	PBDB + regression	*
Meniscotherium tapiacitum	1864.20	PBDB + regression	
Menoceras arikareense	597195.61	(1)	
Menoceras barbouri	1251683.50	(1)	
Menops bakeri	3993312.11	PBDB	
Mentoclaenodon acrogenius	37446.92	PBDB + regression	
Mephitis mephitis	2055.00	PBDB	
Merriamoceros coronatus	15214.44	(1)	
Merychippus brevidontus	124243.67	(1)	
Merychippus calamarius	196811.17	(1)	
Merychippus californicus	86681.87	(1)	
Merychippus goorisi	222888.24	PBDB + regression	
Merychippus gunteri	92041.97	(1)	
Merychippus insignis	125492.34	(1)	
Merychippus primus	95798.28	(1)	
Merychippus relictus	60471.00	(4)	
Merychippus sejunctus	75357.60	(1)	
Merychys arenarum	52892.75	PBDB + regression	
Merychys crabilli	6038.43	(48)	*
Merychys elegans	45706.69	(1)	
Merychys medius	108012.26	(1)	
Merychys minimus	29620.91	PBDB + regression	
Merychys relictus	20923.07	PBDB	
Merychys smithi	135340.58	PBDB + regression	
Merycochoerus carrikeri	313334.13	(49)	
Merycochoerus chelydra	289450.77	PBDB	
Merycochoerus magnus	331041.82	(1)	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Merycochoerus matthewi	59736.09	PBDB + regression	
Merycochoerus proprius	265667.29	(1)	
Merycochoerus superbus	438400.00	(4)	
Merycodus prodromus	8738.23	(50)	
Merycodus sabulonis	10509.13	(1)	
Merycodus warreni	12597.43	(51)	
Merycoides harrisonensis	90219.42	(1)	
Merycoides longiceps	56672.65	(52)	
Merycoides pariogonus	77000.00	(4)	
Merycoidodon bullatus	109500.00	(4)	
Merycoidodon culbertsoni	116748.58	PBDB + regression	
Merycoidodon major	62200.00	(4)	
Mescalerolemur horneri	193.21	(53)	
Mesocyon brachyops	7942.63	(1)	
Mesocyon coryphaeus	10198.54	(1)	
Mesocyon temnodon	7186.79	(1)	
Mesodma ambigua	115.64	PBDB + regression	
Mesodma formosa	32.59	PBDB + regression	
Mesodma garfieldensis	37.51	PBDB + regression	
Mesodma pygmaea	8.53	PBDB + regression	
Mesodma thompsoni	54.13	PBDB + regression	
Mesogaulus paniensis	926.80	PBDB	
Mesohippus bairdi	39223.29	PBDB + regression	
Mesohippus exoletus	47569.37	PBDB + regression	
Mesohippus texanus	35643.43	PBDB + regression	
Mesohippus westoni	39355.66	PBDB + regression	
Mesonyx obtusidens	147850.73	PBDB	
Mesoreodon chelonys	133078.52	(54)	
Mesoreodon floridensis	104820.01	(1)	
Mesoreodon minor	159700.00	(4)	
Mesoscalops montanensis	85.63	(1)	
Mesoscalops scopelotemos	95.58	(1)	
Metadjidaumo hendryi	10.38	(1)	
Metaliomys sevierensis	15.90	PBDB + regression	
Metanoiamys agorus	12.11	PBDB + regression	
Metanoiamys fantasma	20.14	PBDB + regression	
Metanoiamys korthi	13.95	PBDB + regression	
Metanoiamys lacus	10.39	PBDB + regression	
Metanoiamys marinus	8.78	PBDB + regression	
Metarhinus pater	1098772.19	PBDB	
Metatomarctus canavus	10938.02	(1)	
Metechinus amplior	567.90	(35)	
Miacis deutschii	968.28	PBDB + regression	
Miacis exiguus	1775.93	PBDB + regression	
Miacis hookwayi	2350.87	(55)	
Miacis latidens	2236.53	PBDB + regression	
Miacis parvivorus	2384.02	PBDB + regression	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Miacis petilus	1591.36	PBDB + regression	
Michenia agatensis	99707.88	(1)	
Michenia exilis	65512.75	(1)	
Microcosmodon conus	16.11	PBDB + regression	
Microcosmodon rosei	27.99	PBDB + regression	
Microeutypomys karenae	12.11	PBDB + regression	
Microeutypomys tilliei	22.41	PBDB + regression	
Micromomys antelucanus	5.04	PBDB	
Microparamys cheradius	57.59	PBDB + regression	
Microparamys dubius	20.14	PBDB + regression	
Microparamys hunterae	14.33	PBDB	
Microparamys minutus	24.79	PBDB + regression	
Microparamys nimius	29.87	PBDB + regression	
Microparamys sambucus	41.22	PBDB + regression	
Microparamys tricus	57.59	PBDB + regression	
Microparamys woodi	32.56	PBDB + regression	
Micropternodus borealis	41.19	PBDB + regression	
Micropternodus montrosensis	103.85	PBDB + regression	
Micropternodus morgani	72.24	(1)	
Microsus cuspidatus	2597.76	PBDB + regression	
Microsyops angustidens	352.30	PBDB + regression	
Microsyops annectens	1522.82	PBDB + regression	
Microsyops cardiorestes	186.75	PBDB + regression	
Microsyops elegans	738.98	PBDB + regression	
Microsyops knightensis	521.24	PBDB + regression	
Microsyops kratos	1455.64	PBDB + regression	
Microsyops latidens	472.21	PBDB + regression	
Microsyops scottianus	634.92	PBDB + regression	
Microtomarctus conferta	8866.19	(1)	
Mictomys vetus	76.28	PBDB + regression	
Mimatuta morgoth	512.92	PBDB + regression	
Mimetodon silberlingi	21.68	PBDB + regression	
Mimomys mcknighti	110.70	PBDB	
Mimomys panacaensis	84.39	PBDB + regression	
Mimomys parvus	99.10	PBDB	
Mimomys primus	163.60	PBDB	
Mimomys taylori	80.90	PBDB	
Mimoperadectes labrus	285.50	PBDB + regression	
Mimotricentes fremontensis	2674.19	PBDB + regression	
Mimotricentes subtrigonus	1984.90	PBDB + regression	
Miniochoerus affinis	35835.68	PBDB	
Miniochoerus gracilis	15437.78	PBDB	
Minippus index	4819.64	PBDB	
Mioclaenus turgidus	4412.84	PBDB + regression	
Miocyon scotti	41776.02	PBDB + regression	
Miocyon vallisrubrae	14244.90	PBDB + regression	
Mioheteromys amplissimus	41.26	(1)	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Miohippus anceps	41650.00	(4)	
Miohippus assiniboiensis	78519.40	PBDB + regression	
Miohippus equiceps	41650.00	(4)	
Miohippus equinanus	35954.16	(1)	
Miohippus gidleyi	129635.34	PBDB + regression	
Miohippus grandis	76252.18	PBDB	
Miohippus intermedius	82454.34	(1)	
Miohippus obliquidens	52575.21	(1)	
Miolabis fricki	240385.70	(1)	
Miomustela madisonae	13.46	(1)	*
Mionictis elegans	6652.51	PBDB	
Mionictis incertus	9269.73	PBDB	
Mionictis letifer	134.29	(1)	*
Mionictis pristinus	32167.60	PBDB + regression	
Miosciurus ballovianus	36.60	(1)	*
Miosicista angulus	8.15	PBDB	
Miospermophilus laveryi	106.70	(1)	
Miospermophilus wyomingensis	83.10	(1)	
Miotapirus harrisonensis	275463.83	PBDB + regression	
Miotylopus gibbi	48050.12	(1)	
Miotylopus leonardi	43044.94	(1)	
Miotylopus taylori	73865.41	(1)	
Miracinonyx inexpectatus	41653.42	PBDB + regression	
Miracinonyx studeri	25529.71	PBDB + regression	
Mithrandir gillianus	644.09	PBDB + regression	
Mixodectes malaris	538.07	PBDB + regression	
Mixodectes pungens	1563.78	PBDB + regression	
Mojavemys galushai	28.22	(1)	
Mojavemys lophatus	15.19	PBDB	
Mojavemys magnumarcus	56.26	(1)	
Montanatylopus matthewi	176770.65	PBDB + regression	*
Mookomys altifluminis	13.07	(1)	
Mookomys formicarum	11.86	PBDB	
Mookomys thrinax	11.94	(1)	
Moropus elatus	707858.86	(1)	
Moropus merriami	173767.00	(4)	*
Moropus oregonensis	189094.09	(1)	*
Mustela frenata	146.89	(11)	*
Mustela meltoni	895.71	PBDB + regression	
Mustela rexroadensis	9.58	(1)	*
Mylandon rosei	27.99	PBDB + regression	*
Mylohyus elmorei	168990.43	PBDB + regression	
Myrmecoboides montanensis	45.21	PBDB + regression	*
Myrmecophaga tridactyla	32544.00	PBDB	
Mysops parvus	54.13	PBDB + regression	
Mystipterus martini	29.37	(1)	
Mystipterus pacificus	14.88	(1)	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Mytonolagus petersoni	213.83	PBDB + regression	
Mytonolagus wyomingensis	84.09	PBDB + regression	*
Mytonomeryx scotti	5465.38	PBDB + regression	
Mytonomys burkei	2757.96	PBDB + regression	
Mytonomys mytonensis	1177.52	PBDB + regression	
Mytonomys robustus	2795.71	PBDB + regression	
Namatomys lloydi	24.79	PBDB + regression	
Nannippus aztecus	106272.86	PBDB + regression	
Nannippus beekensis	137564.87	PBDB + regression	
Nannippus peninsulatus	68871.66	(1)	
Nannippus westoni	62317.65	(1)	
Nannodectes gidleyi	521.24	PBDB + regression	
Nannodectes intermedius	133.09	PBDB + regression	
Nannodectes simpsoni	402.81	PBDB + regression	
Nanodelphys hunti	7.27	PBDB + regression	*
Nanotragulus loomisi	2724.39	(1)	
Nanotragulus ordinatus	5541.39	(1)	
Nanotragulus planiceps	3678.00	(4)	
Navajovius kohlhaasae	12.82	PBDB + regression	*
Nebraskomys mcgrewi	46.06	(1)	*
Nebraskomys rexroadensis	47.48	PBDB + regression	*
Nekrolagus progressus	1510.20	(1)	
Neohipparion affine	167711.41	(1)	
Neohipparion eurystyle	133252.35	(1)	
Neohipparion leptode	233281.23	(1)	
Neohipparion trampasense	120571.71	(1)	
Neoliotomus conventus	1894.05	PBDB + regression	
Neoliotomus ultimus	2252.70	PBDB + regression	
Neoplagiaulax donaldorum	52.00	(7)	
Neoplagiaulax grangeri	93.00	(7)	
Neoplagiaulax hazeni	95.39	PBDB + regression	
Neoplagiaulax hunteri	42.74	PBDB + regression	
Neoplagiaulax macrotomeus	14.42	PBDB + regression	
Neoplagiaulax mckennai	60.27	PBDB + regression	
Neotoma cinerea	299.23	(11)	
Neotoma fossilis	161.61	PBDB + regression	
Neotoma leucopetrical	389.66	(56)	
Neotoma quadriplicata	477.49	PBDB + regression	
Neotoma sawrockensis	99.48	(1)	
Neotoma taylori	190.07	PBDB + regression	
Neotoma vaughani	190.07	PBDB + regression	
Nerterogeomys anzensis	80.55	PBDB	
Nerterogeomys garbanii	157.02	PBDB	
Nerterogeomys minor	38.23	PBDB + regression	
Nerterogeomys persimilis	49.62	(56)	
Nexuotapirus marslandensis	144350.55	(1)	
Nexuotapirus robustus	302549.45	(1)	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Niglarodon koeneri	68.03	(1)	
Nimravides galiani	159532.03	(1)	
Nimravides thinobates	9582364.97	PBDB	*
Nimravus brachyops	3789.54	(1)	*
Nimravus sectator	112444.51	PBDB + regression	
Niptomomys doreenae	17.88	PBDB + regression	
Niptomomys thelmae	19.74	PBDB + regression	
Nonomys gutzleri	20.14	PBDB + regression	
Nonomys simplicidens	15.90	PBDB + regression	
Notharctus pugnax	3034.76	PBDB + regression	
Notharctus robinsoni	3318.67	PBDB + regression	
Notharctus robustior	6900.00	(22)	
Notharctus tenebrosus	4325.36	PBDB + regression	
Notharctus venticolus	2691.73	PBDB + regression	
Nothokemas floridanus	100709.96	(1)	
Nothokemas waldropi	22925.38	(1)	
Nothotylopus campognathus	334368.85	(1)	
Nothrotheriops shastensis	613762.01	(57)	
Nothrotheriops texanus	124768.59	PBDB + regression	
Notiosorex jacksoni	11.14	(58)	
Notiosorex repenningi	17.08	(59)	
Notiotitanops mississippiensis	4455686.16	PBDB + regression	
Notolagus lepusculus	372.41	(1)	
Nototamias hulberti	17.12	(1)	*
Nototamias quadratus	35.87	(1)	*
Nyctitherium serotinum	12.08	PBDB + regression	
Nyctitherium velox	24.97	PBDB + regression	
Ochotona spanglei	188.67	(1)	
Odocoileus virginianus	52607.00	PBDB	
Ogmodontomys poaphagus	131.63	(1)	
Ogmodontomys sawrockensis	140.40	PBDB	
Oklahomalagus whisenhunti	387.61	(1)	
Oligobunis floridanus	24237.19	PBDB + regression	
Oligoryctes cameronensis	4.73	PBDB + regression	
Oligoscalops galbreathi	15.04	PBDB + regression	
Oligospermophilus douglassi	115.51	PBDB + regression	
Omomys carteri	171.31	PBDB + regression	
Omomys lloydi	66.71	PBDB + regression	
Onychomys hollisteri	20.14	PBDB + regression	
Onychomys martini	18.36	(1)	
Onychomys pedroensis	36.23	(1)	
Oregonomys magnus	20.14	PBDB + regression	
Oregonomys pebblespringsensis	26.58	(1)	
Oregonomys sargenti	26.05	(1)	
Oreodontoides oregonensis	25336.47	(1)	
Oreolagus colteri	48.28	PBDB + regression	*
Oreolagus nebrascensis	336.97	(1)	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Oreolagus nevadensis	78.00	(4)	*
Oreolagus wallacei	354.25	(1)	
Oreotalpa florissantensis	10.87	PBDB + regression	
Orohippus pumilus	11144.64	PBDB + regression	
Orohippus sylvaticus	10210.29	PBDB + regression	
Oromeryx plicatus	8545.03	PBDB + regression	
Oropycitis pediasius	161.61	PBDB + regression	
Osbornoceros osborni	17326.63	(1)	
Osbornodon brachypus	12282.74	(60)	
Osbornodon fricki	25848.30	(1)	
Osbornodon iammonensis	13904.95	(1)	
Osbornodon renjie	9337.04	PBDB + regression	
Osbornodon scitulus	11849.01	(1)	
Osbornodon sesnoni	8349.86	(1)	
Otarocyon cooki	1826.21	(1)	
Otarocyon macdonaldi	1270.84	PBDB + regression	
Ottoceros peacevalleyensis	13493.99	(1)	
Ourayia hopsoni	590.00	PBDB + regression	
Ourayia uintensis	758.66	PBDB + regression	
Oxetocyon cuspidatus	2440.60	(1)	
Oxyacodon agapetillus	352.30	PBDB + regression	*
Oxyacodon apiculatus	1116.82	PBDB + regression	
Oxyacodon ferronensis	616.78	PBDB + regression	
Oxyacodon priscilla	808.90	PBDB + regression	
Oxyaena forcipata	49289.23	PBDB + regression	
Oxyaena gulo	42202.38	PBDB + regression	
Oxyaena intermedia	44676.22	PBDB + regression	
Oxyclaenus cuspidatus	760.59	PBDB + regression	
Oxyclaenus pugnax	1812.53	PBDB + regression	
Oxyclaenus simplex	566.68	PBDB + regression	
Oxydactylus longipes	112420.32	(1)	
Oxydactylus lulli	140198.81	PBDB	
Oxyprimus erikseni	133.09	PBDB + regression	
Pachyaena gigantea	71758.33	PBDB + regression	
Pachyaena gracilis	38119.28	PBDB + regression	
Pachyaena ossifraga	460896.74	PBDB	
Pachyarmatherium leiseyi	15420.00	(33)	*
Pacichthys montanus	68.53	PBDB + regression	
Pacichthys nebraskensis	80.64	(1)	
Pacichthys woodi	32.63	(61)	
Paenemarmota barbouri	10301.04	(1)	
Paenemarmota mexicana	10977.77	PBDB + regression	
Paenemarmota nevadensis	7644.00	(4)	
Paenemarmota sawrockensis	5943.18	(1)	
Palaechthon alticuspis	51.17	PBDB + regression	
Palaechthon woodi	27.99	PBDB + regression	
Palaectops bicuspis	143.19	(9)	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Palaeictops bridgeri	139.74	PBDB + regression	
Palaeictops multicuspis	149.35	PBDB + regression	
Palaeogale dorotheiae	607.89	(1)	
Palaeogale minuta	400.00	NOW	
Palaeogale sectoria	716.63	PBDB	
Palaeolagus burkei	307.97	(1)	
Palaeolagus hemirhizis	128.62	PBDB + regression	
Palaeolagus hypsodus	678.58	(1)	
Palaeolagus philoi	1211.97	(1)	
Palaeolagus primus	119.90	PBDB + regression	
Palaeolagus temnodon	171.31	PBDB + regression	
Palaeonictis occidentalis	36870.62	PBDB + regression	
Palaeonictis peloria	60916.03	PBDB + regression	
Palaeoryctes cruoris	62.68	PBDB + regression	
Palaeoryctes puercensis	24.97	PBDB + regression	
Palaeosyops laevidens	1052429.44	PBDB + regression	*
Palaeosyops paludosus	1388030.44	PBDB + regression	*
Palaeosyops robustus	1619966.85	PBDB + regression	*
Palenochtha minor	9.87	PBDB + regression	*
Palenochtha weissae	9.87	PBDB + regression	*
Paleotomus junior	171.31	PBDB + regression	*
Paleotomus radagasti	1351.50	PBDB	
Panthera onca	100000.00	PBDB	
Pantolambda bathmodon	63252.15	PBDB	
Pantolambda cavirictus	35087.78	PBDB + regression	
Pantolambda intermedius	19134.73	PBDB + regression	
Parablastomeryx galushi	19345.66	PBDB + regression	
Paracosoryx furlongi	13493.99	(1)	
Paracosoryx wilsoni	15473.78	PBDB	
Paracryptotis gidleyi	28.22	(1)	
Paracryptotis rex	42.10	(1)	
Paracynarctus kelloggi	8349.86	(1)	
Paracynarctus sinclairei	8022.46	(1)	
Paradaphoenus cuspidatus	4023.87	(1)	
Paradaphoenus minimus	3314.52	PBDB + regression	
Paradaphoenus tooheyi	3498.19	(1)	
Paradjidaumo alberti	15.90	PBDB + regression	
Paradjidaumo hypsodus	29.87	PBDB + regression	
Paradjidaumo reynoldsi	20.14	PBDB + regression	
Paradjidaumo spokaneensis	54.13	PBDB + regression	
Paradjidaumo trilophus	32.56	PBDB + regression	
Paradjidaumo validus	61.14	PBDB + regression	
Paradomnina relictus	23.81	(1)	
Paraenhydrocyon josephi	7942.63	(1)	
Paraenhydrocyon wallovianus	14185.85	(1)	
Parahippus leonensis	94845.07	(1)	
Parahippus pawniensis	99707.88	(1)	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Parahippus tyleri	105994.41	PBDB + regression	
Parahippus wyomingensis	98400.00	(30)	
Parahyus vagus	185903.42	PBDB + regression	
Paralabis cedrensis	75771.66	PBDB + regression	
Parallomys americanus	162.39	(1)	
Paramiolabis taylori	131926.47	(1)	
Paramylodon harlani	1185306.75	PBDB + regression	
Paramys adamus	50.76	PBDB + regression	*
Paramys atavus	47.48	PBDB + regression	*
Paramys compressidens	1746.66	PBDB + regression	
Paramys copei	540.72	PBDB + regression	
Paramys delicatior	708.27	PBDB + regression	
Paramys delicatus	1793.22	PBDB + regression	
Paramys excavatus	259.62	PBDB + regression	*
Paramys taurus	316.00	PBDB + regression	*
Paranamatomys storeri	7.59	PBDB	*
Paraplihippus carrizoensis	80821.64	(1)	
Parapliosacomys oregonensis	24.29	(1)	
Parapliosacomys transversus	45.58	PBDB	
Parapotos tedfordi	3533.34	(1)	
Pararyctes pattersoni	17.36	PBDB + regression	
Paratomarctus euthos	14472.42	(1)	
Paratomarctus temerarius	11498.82	(1)	
Paratylopus labiatus	47357.63	PBDB + regression	
Paratylopus primaevus	29814.41	PBDB + regression	
Parectypodus clemensi	23.70	PBDB + regression	
Parectypodus corystes	40.09	PBDB + regression	
Parectypodus laytoni	11.30	PBDB + regression	
Parectypodus lunatus	21.68	PBDB + regression	
Parectypodus simpsoni	37.51	PBDB + regression	
Parectypodus sinclairi	19.00	(7)	
Parectypodus sylviae	12.82	PBDB + regression	
Parectypodus trovessartianus	87.78	PBDB + regression	
Pareumys boskeyi	88.57	PBDB + regression	
Pareumys grangeri	57.59	PBDB + regression	
Pareumys guensburgi	140.29	PBDB + regression	
Pareumys milleri	76.28	PBDB + regression	
Parictis parvus	1594.41	PBDB + regression	
Parictis personi	2218.53	PBDB + regression	
Paromomys depressidens	57.16	PBDB + regression	
Paromomys maturus	197.38	PBDB + regression	
Paronychomys alticuspis	17.12	(1)	
Paronychomys lemredfieldi	20.09	(1)	
Paronychomys tuttlei	38.86	(1)	
Paroreodon parvus	51150.00	(4)	
Parvericius montanus	41.26	(1)	
Parvericius voorhiesi	28.79	(1)	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Patriofelis ferox	22418.00	(4)	
Patriofelis ulta	48311.29	PBDB + regression	
Patriolestes novaceki	246.37	PBDB + regression	
Pauromys exallos	17.97	PBDB + regression	
Pauromys lillegraveni	12.11	PBDB + regression	
Pauromys simplex	13.95	PBDB + regression	
Pauromys texensis	17.97	PBDB + regression	
Pediomeryx hemphillensis	167711.41	(1)	
Pelycodus jarrovi	3222.75	PBDB + regression	
Pelycomys brulanus	214.27	PBDB + regression	
Pelycomys rugosus	330.84	PBDB + regression	
Penetrignias hudsoni	601751.47	PBDB	
Pentacemylus leotensis	5601.22	PBDB + regression	
Pentacemylus progressus	7131.24	PBDB + regression	
Pentacodon inversus	604.36	PBDB + regression	
Pentacodon occultus	1560.69	PBDB + regression	
Peraceras hessei	936589.16	(1)	
Peraceras profectum	2326789.55	(1)	
Peraceras superciliosum	1639660.88	(1)	
Peradectes californicus	6.11	PBDB + regression	
Peradectes chesteri	5.04	PBDB + regression	
Peradectes elegans	11.30	PBDB + regression	
Peradectes minor	11.23	(62)	
Peradectes protinnominatus	12.82	PBDB + regression	
Peratherium comstocki	87.78	PBDB + regression	
Peratherium marsupium	91.55	PBDB + regression	
Perchoerus probus	24602.41	PBDB + regression	
Peridiomys halis	63.43	(1)	
Peridiomys oregonensis	35.35	PBDB + regression	
Peridiomys rusticus	69.41	(1)	
Periptychus carinidens	30641.27	PBDB + regression	
Periptychus coarctatus	22723.44	PBDB + regression	
Perognathus ancenensis	11.47	(1)	
Perognathus coquorum	35.35	PBDB + regression	
Perognathus dunklei	7.92	(1)	
Perognathus furlongi	9.68	(1)	
Perognathus gidleyi	11.82	(1)	
Perognathus maldei	10.39	PBDB + regression	
Perognathus mclaughlini	8.33	(1)	
Perognathus minutus	5.93	(1)	
Perognathus pearlettensis	6.89	(1)	
Perognathus rexroadensis	17.97	PBDB + regression	
Perognathus trojectionansrum	3.63	(1)	
Peromyscus antiquus	26.84	(1)	
Peromyscus brachygnathus	10.39	PBDB + regression	
Peromyscus complexus	25.46	PBDB	
Peromyscus cragini	15.49	(1)	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Peromyscus dentalis	12.11	PBDB + regression	
Peromyscus hagermanensis	19.89	(1)	
Peromyscus minimus	4.67	PBDB + regression	
Peromyscus nosher	15.90	PBDB + regression	
Peromyscus polionotus	14.30	PBDB	
Peromyscus sarmocophinus	17.97	PBDB + regression	
Petauristodon jamesi	307.97	(1)	
Petauristodon mathewsi	214.86	(1)	
Petauristodon pattersoni	336.97	(1)	
Pewelagus dawsonae	447.84	(63)	
Pewelagus mexicanus	186.75	PBDB + regression	
Phelosacomys annae	26.31	(1)	
Phelosacomys hibbardi	46.53	(1)	
Phelosacomys neomexicanus	19.89	(1)	
Phelosacomys shotwelli	20.49	(1)	
Phenacocoelus typus	52052.08	(1)	
Phenacodaptes sabulosus	109.55	PBDB + regression	
Phenacodus bisonensis	17047.49	PBDB + regression	
Phenacodus grangeri	28510.66	PBDB + regression	
Phenacodus intermedius	45430.80	PBDB + regression	
Phenacodus magnus	72471.82	PBDB + regression	
Phenacodus matthewi	5446.34	(64)	
Phenacodus trilobatus	64494.29	PBDB + regression	
Phenacodus vortmani	10636.06	PBDB + regression	
Phenacolemur fortior	186.75	(65)	
Phenacolemur mcgrewi	63.45	PBDB + regression	
Phenacolemur praecox	151.65	PBDB + regression	
Phenacolemur simonsi	40.09	PBDB + regression	
Phenacomys gryci	228.00	(4)	
Philotrox condoni	11968.10	(1)	
Phlaocyon achoros	2951.30	(1)	
Phlaocyon annectens	3498.19	(1)	
Phlaocyon latidens	2779.43	(1)	
Phlaocyon leucosteus	3827.63	(1)	
Phlaocyon minor	3498.19	(1)	
Phlaocyon taylori	1939.14	(1)	
Phlaocyon yatkolai	9604.62	(1)	
Phoberocyon johnhenryi	179871.86	(1)	
Picrodus calgariensis	12.82	PBDB + regression	
Picrodus canpaci	48.28	PBDB + regression	
Picrodus silberlingi	48.28	PBDB + regression	
Pipestoneomys bisulcatus	47.48	PBDB + regression	
Plagiostenodon krausae	4.73	PBDB + regression	
Plagiostenodon rosei	10.87	PBDB + regression	
Plagiomene accola	359.33	PBDB + regression	
Plagiomene multicuspis	850.13	PBDB + regression	
Planisorex dixonensis	12.08	PBDB + regression	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Platygonus bicalcaratus	114741.07	PBDB + regression	
Platygonus oregonensis	40134.84	(1)	
Platygonus pearcei	55826.28	(1)	
Platygonus vetus	65463.62	(57)	
Plesiadapis anceps	291.90	PBDB + regression	*
Plesiadapis churchilli	871.09	PBDB + regression	
Plesiadapis cookei	4434.83	PBDB + regression	
Plesiadapis dubius	417.80	PBDB + regression	*
Plesiadapis fodinatus	709.89	PBDB + regression	
Plesiadapis gingerichi	2726.96	PBDB + regression	
Plesiadapis praecursor	192.03	PBDB + regression	*
Plesiadapis rex	690.80	PBDB + regression	
Plesiocolopirus hancocki	42441.52	PBDB + regression	
Plesiogulo lindsayi	4628.55	(1)	
Plesiogulo marshalli	3133.79	(1)	
Plesiolestes nacimienti	233.00	(22)	
Plesiolestes problematicus	115.64	PBDB + regression	
Plesiolestes wilsoni	366.42	PBDB + regression	
Plesiosminthus clivosus	9.30	(1)	
Plesiosorex coloradensis	192.48	(1)	
Plesiosorex donroosai	685.40	(1)	
Pleurolicus dakotensis	60.95	(1)	
Pleurolicus exiguus	24.79	PBDB + regression	
Pleurolicus sellardsi	53.28	(66)	
Pleurolicus sulcifrons	83.93	(1)	
Pliocyon medius	172818.99	(1)	
Pliocyon robustus	176310.16	(1)	
Pliogale furlongi	456.36	(65)	*
Pliogale manka	2986.47	PBDB + regression	
Pliogeomys parvus	10.28	(1)	
Pliogeomys russelli	15.18	(1)	
Plihippus fossulatus	257815.63	(1)	
Plihippus pernix	198789.15	(1)	
Plihippus tehonensis	164875.58	PBDB + regression	
Pliometanastes galushai	8636.25	PBDB	*
Pliometanastes protistus	88139.12	PBDB + regression	*
Plionarctos edensis	56954.05	(1)	
Plionarctos harroldorum	47351.79	PBDB + regression	
Plionictis ogygia	36.97	(1)	*
Pliophenacomys dixonensis	50.76	PBDB + regression	
Pliophenacomys finneyi	64.79	PBDB + regression	
Pliophenacomys meadensis	54.13	PBDB + regression	
Pliophenacomys osborni	86.49	(1)	
Pliophenacomys primaevus	61.56	(1)	
Pliosaccomys dubius	27.66	(1)	
Pliosaccomys higginsensis	18.17	(1)	
Pliotaxidea garberi	4440.12	PBDB + regression	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Pliotaxidea nevadensis	130.32	(1)	*
Pliotomodon primitivus	107.77	(1)	
Pliozapus solus	18.73	(1)	
Plithocyon ursinus	189094.09	(1)	
Poabromylus golzi	11885.48	PBDB + regression	
Poabromylus kayi	23487.74	PBDB + regression	
Poebrotherium eximium	50423.02	PBDB + regression	*
Poebrotherium wilsoni	60615.67	PBDB + regression	*
Pogonodon eileenae	138453.42	(67)	
Pratifelis martini	215345.72	(1)	
Pratilepus kansasensis	972.63	(1)	
Premnoides douglassi	40.09	PBDB + regression	
Presbymys lophatus	72.36	PBDB + regression	
Presbyterium rhodorugatus	2901.91	PBDB + regression	
Princetonina yalensis	1703.86	PBDB + regression	
Probassariscus matthewi	2396.46	PBDB + regression	
Probathyopsis harrisorum	96406.85	PBDB + regression	
Probathyopsis praecursor	119830.36	PBDB + regression	
Problastomeryx primus	14913.17	(1)	
Procamelus grandis	400312.19	(1)	
Procamelus occidentalis	189094.09	(1)	
Procerberus formicarum	67.38	PBDB + regression	
Prochetodon cavus	213.83	PBDB + regression	
Prochetodon foxi	202.80	PBDB + regression	
Prochetodon speirsae	417.88	PBDB	
Prochetodon taxus	480.23	PBDB + regression	
Procranioceras skinneri	169396.94	(1)	
Procynodictis progressus	3665.64	PBDB + regression	
Procyon lotor	5814.00	PBDB	
Procyon rexroadensis	9632.47	PBDB + regression	
Prodiacodon concordiaricensis	43.19	PBDB + regression	
Prodiacodon crustulum	125.81	(68)	
Prodiacodon furor	66.91	(36)	
Prodiacodon puercensis	225.49	(69)	
Prodiacodon tauricinerei	82.27	PBDB + regression	
Prodipodomys centralis	21.26	(70)	
Prodipodomys idahoensis	22.42	(1)	
Prodipodomys kansensis	12.81	(1)	
Prodipodomys timoteoensis	20.14	PBDB + regression	
Prohesperocyon wilsoni	3787.93	PBDB + regression	
Proheteromys fedti	17.97	PBDB + regression	
Proheteromys floridanus	5.37	(1)	
Proheteromys gremmelsi	27.97	(70)	
Proheteromys ironcloudi	10.59	(1)	
Proheteromys maximus	87.36	(1)	
Proheteromys nebraskensis	21.54	PBDB	
Proheteromys sulculus	15.90	PBDB + regression	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Proheteromys toledoensis	59.15	(1)	
Prolapsus junctionis	72.36	PBDB + regression	
Prolapsus sibilatoris	178.45	PBDB + regression	
Prolimnocyon antiquus	1442.37	PBDB + regression	
Prolimnocyon atavus	2467.80	PBDB + regression	
Prolimnocyon haematus	1058.55	PBDB + regression	
Promartes darbyi	3029.14	(71)	
Promartes gemmarosae	1945.16	(71)	
Promartes lepidus	6776.78	(72)	
Promioclauenus acolytus	410.27	PBDB + regression	
Promioclauenus pipiringosi	748.79	PBDB + regression	
Promioclauenus thnetus	260.57	(73)	
Promylagaulus riggsi	85.63	(1)	
Pronodens silberlingi	22247.84	(1)	
Pronothodectes gaoi	254.50	PBDB + regression	
Pronothodectes jepi	242.55	PBDB + regression	
Pronothodectes matthewi	142.24	PBDB + regression	
Pronotolagus apachensis	445.86	(1)	*
Pronotolagus nevadensis	60.34	(1)	*
Pronotolagus whitei	1436.55	(1)	
Proscalops miocaenus	28.30	PBDB + regression	
Proscalops secundus	72.97	(1)	
Proscalops tertius	96.54	(1)	
Prosciurus magnus	106.19	PBDB + regression	
Prosciurus parvus	68.53	PBDB + regression	
Prosciurus relictus	64.79	PBDB + regression	
Prosigmodon chihuahuensis	72.36	PBDB + regression	
Prosigmodon ferrusquiai	48.33	PBDB	
Prosigmodon holocuspis	113.30	(1)	
Prosigmodon oroscoi	27.28	PBDB + regression	
Prosomys mimus	32.56	PBDB + regression	
Prosthennops niobrarensis	43044.94	(1)	
Prosthennops serus	53637.30	(1)	
Prosthennops xiphodonticus	23860.99	(1)	
Prosynthetoceras francisi	134591.56	(1)	
Prosynthetoceras orthrionanus	40134.84	(1)	
Protadjidaumo pauli	17.97	PBDB + regression	
Protadjidaumo typus	12.11	PBDB + regression	
Protapirus obliquidens	168000.80	(74)	
Protapirus simplex	189283.62	PBDB + regression	
Protepicyon raki	23623.56	(1)	
Proterix bicuspis	194.51	(75)	
Proterix loomisi	523.22	PBDB + regression	
Proterixoides davisi	242.45	PBDB + regression	
Prothryptacodon albertensis	464.26	PBDB + regression	
Prothryptacodon furens	1351.03	PBDB + regression	
Prothryptacodon hilli	1954.40	PBDB + regression	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Protictis haydenianus	2074.37	PBDB + regression	
Protictis microlestes	722.34	PBDB	
Protictis minor	1270.84	PBDB + regression	
Protictis paralus	354.83	PBDB + regression	*
Protictis paulus	298.35	PBDB	*
Protictis simpsoni	3202.65	PBDB + regression	
Protitanops curryi	142477.00	(4)	
Protitanotherium superbum	2858807.95	PBDB + regression	
Protoceras celer	105068.04	PBDB + regression	*
Protoceras skinneri	81023.96	PBDB	
Protohippus gidleyi	164390.50	(1)	
Protohippus perditus	135944.23	(1)	
Protohippus supremus	167711.41	(1)	
Protohippus vetus	123329.89	PBDB	
Protolabis coartatus	110194.25	(1)	
Protolabis heterodontus	219695.99	(1)	
Protomarcus optatus	11271.13	(1)	
Protoreodon pacificus	34181.30	PBDB + regression	
Protoreodon parvus	33051.65	PBDB + regression	
Protoreodon pearcei	38169.88	PBDB + regression	
Protoreodon petersoni	18828.04	PBDB + regression	
Protoreodon pumilus	51870.94	PBDB + regression	*
Protoreodon walshi	59926.66	PBDB + regression	*
Protorohippus venticolus	14768.64	PBDB + regression	
Protosciurus mengi	401.25	PBDB + regression	
Protosciurus tecuyensis	478.19	(1)	
Protoselene griphus	1619.16	PBDB + regression	
Protoselene opisthacus	1703.86	PBDB + regression	
Protospermophilus kelloggi	202.35	(1)	
Protospermophilus malheurensis	103.54	(1)	
Protospermophilus oregonensis	450.34	(1)	
Protospermophilus quatalensis	273.14	(1)	
Protospermophilus vortmani	230.44	(1)	
Prototomus deimos	504.65	PBDB + regression	
Prototomus martis	3573.98	PBDB + regression	
Prototomus phobos	2691.73	PBDB + regression	
Prototomus robustus	2434.13	PBDB + regression	
Prototomus secundarius	1522.82	PBDB + regression	
Protungulatum donnae	546.57	PBDB + regression	
Protylopus annectens	14816.10	PBDB + regression	
Protylopus pearsonensis	38366.65	PBDB + regression	
Protylopus petersoni	18468.57	PBDB + regression	
Protylopus robustus	17655.81	PBDB + regression	
Protylopus stocki	15437.78	PBDB + regression	
Proviverroides piercei	7343.84	PBDB + regression	
Psalidocyon marianae	8777.97	(1)	
Pseudaelurus aeluroides	31571.18	(1)	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Pseudaelurus intrepidus	40945.61	(1)	*
Pseudaelurus marshi	33189.87	(1)	
Pseudaelurus stouti	5767.53	(1)	
Pseudhipparion curtivallum	58104.59	(1)	
Pseudhipparion gratum	108012.26	(1)	
Pseudhipparion hessei	75357.60	(1)	
Pseudhipparion retrusum	86681.87	(1)	
Pseudhipparion simpsoni	48050.12	(1)	
Pseudhipparion skinneri	54176.36	(1)	
Pseudoblastomeryx advena	10097.06	(1)	
Pseudoceras skinneri	10938.02	(1)	
Pseudocylindrodon lateriviae	101.65	PBDB + regression	
Pseudocylindrodon medius	44.30	PBDB + regression	
Pseudocylindrodon neglectus	88.57	PBDB + regression	
Pseudocylindrodon pintoensis	194.89	MIOMAP	
Pseudodiplacodon progressum	1263102.01	PBDB	
Pseudolabis dakotensis	59874.14	(1)	
Pseudoparablastomeryx francescita	4900.87	PBDB	
Pseudoparablastomeryx scotti	5884.05	(1)	
Pseudoprotoceras longinaris	35005.16	PBDB + regression	
Pseudoprotoceras minor	19973.07	PBDB + regression	
Pseudotheridomys cuyamensis	12.43	(1)	
Pseudotheridomys hesperus	14.15	(1)	
Pseudotheridomys pagei	8.17	(1)	
Pseudotomus californicus	3660.37	PBDB + regression	
Pseudotomus eugenei	14363.43	PBDB + regression	
Pseudotomus hians	2299.39	PBDB	
Pseudotomus horribilis	2971.99	(76)	
Pseudotomus johanniculi	12241.50	PBDB + regression	
Pseudotomus littoralis	2500.02	PBDB + regression	
Pseudotomus petersoni	4209.29	(76)	
Pseudotomus robustus	4052.00	PBDB + regression	
Pseudotrimylus mawbyi	142.92	PBDB + regression	
Ptilodus fractus	105.00	(7)	
Ptilodus gnomus	87.78	PBDB + regression	
Ptilodus kummae	208.28	PBDB + regression	
Ptilodus mediaevus	311.46	PBDB + regression	
Ptilodus montanus	373.57	PBDB + regression	
Ptilodus wyomingensis	147.00	(7)	
Puercolestes simpsoni	138.73	PBDB + regression	
Puma concolor	48009.00	PBDB	
Puma lacustris	17724.85	PBDB + regression	
Pyrocyon diotetus	1834.56	PBDB + regression	
Quadratamus grandis	1595.31	PBDB + regression	
Quadratamus grossus	4624.34	PBDB + regression	
Quadrodens wilsoni	46.06	(1)	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Rakomeryx sinclairi	111301.72	(1)	
Rapamys fricki	1050.61	PBDB + regression	
Raphictis gausion	261.58	PBDB + regression	
Reithrodontomys galushai	10.39	PBDB + regression	
Reithrodontomys rexroadensis	7.29	PBDB + regression	
Reithrodontomys wetmorei	9.03	(1)	
Reithroparamys debequensis	190.07	PBDB + regression	
Reithroparamys delicatissimus	460.05	PBDB + regression	
Reithroparamys huerfanensis	338.37	PBDB + regression	
Reithroparamys sciuroides	482.77	(77)	
Repomys arizonensis	54.13	PBDB + regression	
Repomys gustelyi	81.45	(1)	
Repomys maxumi	122.73	(1)	
Repomys panacaensis	38.47	(1)	
Rhizocyon oregonensis	3361.02	(1)	
Rhynchotherium falconeri	54956347.86	PBDB + regression	*
Russellagus vonhofi	214.86	(1)	
Sanctimus falckenbachii	151.41	(1)	
Sanctimus stouti	120.30	(1)	
Sanctimus stuartae	100.48	(1)	
Satherium piscinarium	934.49	(1)	
Saxonella naylori	45.48	PBDB + regression	
Scalopoides isodens	32.14	(1)	
Scalopoides ripafodiator	27.39	(1)	
Scalopus aquaticus	39.60	PBDB	
Scapanoscapter simplicidens	58.56	(1)	
Scapanus hagermanensis	7.00	(4)	
Scapanus latimanus	55.00	PBDB	
Scapanus proceridens	65.37	(1)	
Scapanus shultzi	97.00	(4)	
Scapanus townsendii	141.58	(11)	
Scaphohippus sumani	103960.05	PBDB	
Scenopagus curticens	26.62	PBDB + regression	
Scenopagus edenensis	72.22	PBDB + regression	
Scenopagus priscus	17.36	PBDB + regression	
Schaubeumys galbreathi	19.54	(78)	
Schaubeumys grangeri	20.14	PBDB + regression	
Schaubeumys sabrae	17.54	(39)	
Schizodontomys amnicolus	111.05	(1)	
Schizodontomys greeni	94.00	(4)	
Schizodontomys harkseni	105.64	(1)	
Sciuravus bridgeri	41.22	PBDB + regression	
Sciuravus nitidus	167.14	PBDB + regression	
Sciuravus popi	338.37	PBDB + regression	
Sciuravus powayensis	88.57	PBDB + regression	
Sciuravus wilsoni	84.39	PBDB + regression	
Sciurion campestre	27.28	PBDB + regression	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Sciurus carolinensis	518.00	PBDB	
Sciurus olsoni	22.73	PBDB	
Scottimus exiguus	68.99	(31)	
Scottimus longiquus	111.05	(1)	
Scottimus lophatus	132.82	PBDB	
Scottimus viduus	44.30	PBDB + regression	
Selenaletes scopaeus	8232.01	PBDB + regression	
Serbelodon barbourensis	11462314.59	(45)	*
Sespedectes singularis	28.30	PBDB + regression	
Sespedectes stocki	23.37	PBDB + regression	
Sespemys thurstoni	290.03	(1)	
Sespia californica	3604.72	(1)	
Sespia nitida	2394.82	(79)	
Shoshonius bowni	142.24	PBDB + regression	
Shoshonius cooperi	57.16	PBDB + regression	
Sifrhippus aemulor	6498.52	(80)	*
Sifrhippus grangeri	11578.47	PBDB + regression	*
Sifrhippus sandrae	10631.54	PBDB + regression	*
Sigmodon curtisi	92.85	PBDB + regression	
Sigmodon hudsphethensis	68.53	PBDB + regression	
Sigmodon minor	52.98	(1)	
Simidectes magnus	3787.93	PBDB + regression	
Simidectes medius	2882.11	PBDB + regression	
Simidectes merriami	6833.74	PBDB + regression	
Similisciurus maxwelli	259.82	(1)	
Simimeryx hudsoni	4171.22	PBDB + regression	
Simimeryx minutus	1736.45	PBDB + regression	
Simimys landeri	38.23	PBDB + regression	
Simimys simplex	13.95	PBDB + regression	
Simocyon primigenius	70000.00	NOW	
Simojovelhyus pocitosense	19763.18	(38)	
Simpsonictis pegus	245.14	PBDB + regression	
Simpsonictis tenuis	126.87	PBDB + regression	
Simpsonlemur citatus	171.00	(22)	
Simpsonlemur jepsoni	121.00	(22)	
Simpsonodus chacensis	1262.40	PBDB + regression	
Sinclairiella dakotensis	139.74	PBDB + regression	
Sinopa major	7566.66	PBDB + regression	
Sinopa rapax	3299.38	PBDB + regression	
Smilodectes gracilis	1035.64	PBDB + regression	
Smilodectes mcgrewi	1212.97	PBDB + regression	
Smilodectes sororis	935.37	PBDB + regression	
Smilodon gracilis	57206.56	PBDB + regression	
Sminthosinis bowleri	100.48	(1)	
Sorex cinereus	3.80	PBDB	
Sorex edwardsi	6.84	PBDB	
Sorex hagermanensis	7.56	PBDB + regression	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Sorex meltoni	3.46	(1)	
Sorex palustris	13.46	(11)	
Sorex powersi	7.77	(1)	
Sorex rexroadensis	8.00	(4)	
Sorex yatkolai	4.91	PBDB	
Spermophilus argonautus	131.63	(1)	
Spermophilus bensoni	184.93	(1)	
Spermophilus boothi	498.11	(45)	
Spermophilus cragini	578.25	(1)	
Spermophilus dotti	270.43	(1)	
Spermophilus fricki	231.96	(9)	
Spermophilus gidleyi	700.00	(4)	
Spermophilus howelli	139.77	(1)	
Spermophilus jerae	87.36	(1)	
Spermophilus matachicensis	220.52	PBDB + regression	
Spermophilus matthewi	399.62	(81)	
Spermophilus meadensis	100.48	(1)	
Spermophilus rexroadensis	345.98	PBDB + regression	
Spermophilus russelli	166.00	(4)	
Spermophilus shotwelli	204.00	(4)	
Spermophilus tephros	89.12	(1)	
Spermophilus wellingtonensis	295.89	(1)	
Spermophilus wilsoni	247.15	(1)	
Sphacorhysis burntforkensis	40.09	PBDB + regression	
Sphenophalos nevadanus	8789.20	PBDB	
Spilogale microdens	1270.84	(60)	
Spilogale putorius	341.19	(11)	
Spilogale rexroadi	895.71	PBDB + regression	
Stegomastodon mirificus	35283150.07	PBDB + regression	*
Steinius annectens	397.75	(82)	
Steinius vesperinus	119.90	PBDB + regression	
Stelocyon arctylos	2132.95	PBDB + regression	
Stenoechinus tantalus	48.42	(1)	
Stenomylus gracilis	44801.64	(1)	
Stenomylus hitchcocki	38948.67	(1)	
Stenomylus taylori	47980.97	PBDB	
Sthenictis dolichops	665.14	(1)	
Sthenictis junturensis	330.30	(1)	
Stibarus montanus	1152.46	PBDB + regression	
Stibarus obtusilobus	1416.00	PBDB + regression	
Stibarus quadricuspis	2093.31	PBDB + regression	
Stockia powayensis	161.34	PBDB + regression	
Stratimus strobili	20.09	(1)	
Strigorhysis bridgerensis	91.55	PBDB + regression	
Strigorhysis huerfanensis	176.39	PBDB + regression	
Stygimys gratus	128.62	PBDB + regression	
Stygimys jepseni	84.00	(7)	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
<i>Stygimys kuszmauli</i>	291.90	PBDB + regression	
<i>Stylinodon mirus</i>	47987.28	PBDB + regression	
<i>Subdromomeryx antilopinus</i>	59874.14	(1)	
<i>Subhyracodon mitis</i>	458341.99	(83)	
<i>Subhyracodon occidentalis</i>	662391.44	PBDB + regression	
<i>Sunkahetanka geringensis</i>	11158.98	(1)	
<i>Swaindelphys cifellii</i>	24.57	PBDB	
<i>Symmetrodontomys simplicidens</i>	26.84	(1)	
<i>Syndyoceras cooki</i>	73865.41	(1)	
<i>Tachylagus gawneae</i>	146.91	PBDB + regression	*
<i>Taeniolabis taoensis</i>	75621.27	PBDB + regression	
<i>Talpavoides dartoni</i>	8.53	PBDB + regression	
<i>Talpavus conjunctus</i>	45.48	PBDB + regression	
<i>Talpavus duplus</i>	17.88	PBDB + regression	
<i>Talpavus nitidus</i>	11.30	PBDB + regression	
<i>Tamias ateles</i>	32.56	PBDB + regression	
<i>Tanymyktter brachyodontus</i>	102744.44	(1)	
<i>Tapiravus validus</i>	64860.88	(1)	
<i>Tapirus simpsoni</i>	369534.73	(1)	
<i>Tapochoerus egressus</i>	9671.40	PBDB + regression	
<i>Tapochoerus mcmillini</i>	4357.69	PBDB + regression	
<i>Tapocyon dawsonae</i>	17454.68	PBDB + regression	
<i>Tapocyon robustus</i>	21673.71	PBDB + regression	
<i>Tardontia nevadans</i>	157.59	(1)	
<i>Tardontia occidentale</i>	184.22	PBDB + regression	
<i>Tarka stylifera</i>	3858.47	PBDB + regression	
<i>Tatmanius szalayii</i>	46.59	(84)	
<i>Taxidea mexicana</i>	10434.28	(85)	
<i>Taxidea taxus</i>	7112.14	(11)	
<i>Tayassu protervus</i>	45119.24	PBDB	
<i>Teilhardina americana</i>	66.71	PBDB + regression	
<i>Teilhardina crassidens</i>	57.16	PBDB + regression	
<i>Teleoceras meridianum</i>	2022813.66	(1)	
<i>Teletaceras mortivallis</i>	89575.08	PBDB + regression	
<i>Telmatherium altidens</i>	2087486.17	PBDB + regression	
<i>Telmatherium cultridens</i>	627910.03	PBDB + regression	
<i>Telmatherium manteoceras</i>	478340.42	PBDB + regression	
<i>Temnocyon altigenis</i>	32532.67	(1)	
<i>Temnocyon percussor</i>	68871.66	(1)	
<i>Tenudomys bodei</i>	43.38	(1)	
<i>Tenudomys macdonaldi</i>	79.84	(1)	
<i>Tephrocyon rurestris</i>	13095.19	(1)	
<i>Tetoniuss ambiguus</i>	92.52	PBDB	
<i>Tetoniuss matthewi</i>	107.32	PBDB + regression	
<i>Tetoniuss mckennai</i>	57.16	PBDB + regression	
<i>Tetraclaenodon puercensis</i>	9425.94	PBDB + regression	
<i>Tetrapassalus mckennai</i>	5.04	PBDB	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Texomys ritchiei	97.51	(1)	
Thinobadistes segnis	645890.00	(33)	
Thinocyon velox	1924.12	PBDB + regression	
Thinohyus lentus	101400.00	(4)	
Thisbemys corrugatus	965.53	PBDB + regression	
Thisbemys elachistos	140.29	PBDB + regression	*
Thisbemys perditus	587.96	PBDB + regression	
Thisbemys uintensis	1777.64	PBDB + regression	
Thomomys bottae	114.82	(11)	
Thomomys carsonensis	29.87	PBDB + regression	
Thomomys gidleyi	37.34	(1)	
Thryptacodon antiquus	4110.15	PBDB + regression	
Thryptacodon australis	2744.65	PBDB + regression	
Thryptacodon orthogonius	1536.41	PBDB + regression	
Thryptacodon pseudarctos	6070.61	PBDB + regression	
Thylacaelurus campester	35.01	PBDB + regression	
Thylacaelurus montanus	63.45	PBDB + regression	
Thylacodon pusillus	48.28	PBDB + regression	
Ticholeptus zygomatiscus	106937.52	(1)	
Tillodon fodiens	49838.54	PBDB + regression	
Tillomys senex	84.39	PBDB + regression	
Tinimomys graybulliensis	11.30	PBDB + regression	
Tinimomys tribos	5.32	(86)	
Titanoides gidleyi	48022.06	PBDB + regression	
Titanoides nanus	37406.72	PBDB + regression	
Titanoides primaevus	72645.54	PBDB + regression	
Tomarctus brevirostris	17500.77	(1)	
Tomarctus hippophaga	13766.59	(1)	
Torrejonia sirokyi	440.75	PBDB + regression	
Toxotherium hunteri	91951.16	PBDB + regression	
Tregosorex holmani	26.84	(1)	
Tremarctos floridanus	149968.48	(11)	
Trigenicus profectus	28723.88	PBDB + regression	
Trigonias osborni	599072.86	PBDB + regression	
Trigonias yoderensis	264875.92	PBDB + regression	
Trigonictis cookii	7397.01	PBDB + regression	
Trigonictis macrodon	419.89	(1)	
Triisodon quivirensis	22180.76	PBDB + regression	
Trilaccogaulus ovatus	103.54	(1)	
Triplopus cubitalis	34118.20	PBDB + regression	
Triplopus implicatus	64570.33	PBDB + regression	
Triplopus obliquidens	95152.03	PBDB + regression	
Triplopus rhinocerinus	88700.44	PBDB	
Triplopus woodi	69515.35	PBDB	
Tritemnodon agilis	10780.00	(87)	
Tritemnodon strenuus	4702.60	PBDB + regression	
Trogolemur amplior	60.27	PBDB + regression	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Trogolemur myodes	32.59	PBDB + regression	
Trogomys rupinimenthae	12.55	(1)	
Trogosus castoridens	25945.98	PBDB + regression	
Trogosus grangeri	42730.29	PBDB + regression	
Trogosus latidens	86402.00	PBDB + regression	
Tubulodon atopum	186.75	PBDB + regression	
Tubulodon taylori	113.11	PBDB	
Tuscahomys medius	84.22	PBDB	
Tuscahomys minor	44.37	PBDB	
Tylocephalonyx skinneri	1696671.69	PBDB	
Uintaceras radinskyi	516493.43	PBDB + regression	
Uintacyon asodes	6096.02	PBDB + regression	
Uintacyon massefericus	3203.72	PBDB + regression	
Uintacyon rudis	1864.20	PBDB + regression	
Uintanius ameghini	48.28	PBDB + regression	
Uintanius rutherfordi	51.17	PBDB + regression	
Uintasorex montezumicus	2.40	PBDB + regression	
Uintasorex parvulus	6.11	PBDB + regression	
Uintatherium anceps	523092.59	PBDB + regression	
Untermannerix copiosus	121.51	(1)	
Unuchinia dysmathes	114.44	PBDB	
Urisus californicus	130.13	PBDB + regression	
Urocyon cinereoargenteus	3829.00	PBDB	
Ursavus brevirostris	80000.00	NOW	
Ursavus pawniensis	61697.58	(1)	
Ursavus primaevus	90000.00	NOW	
Ursus abstrusus	43499.17	PBDB + regression	
Ursus americanus	93431.00	PBDB	
Utahia carina	17.88	PBDB + regression	
Utahia kayi	37.51	PBDB + regression	
Valenia wilsoni	279.17	PBDB + regression	
Vassacyon promicrodon	5427.03	PBDB + regression	
Viverravus acutus	483.44	PBDB + regression	
Viverravus gracilis	849.04	PBDB + regression	
Viverravus laytoni	241.14	PBDB + regression	
Viverravus lutosus	602.46	PBDB + regression	
Viverravus minutus	602.46	PBDB + regression	
Viverravus politus	1009.45	PBDB + regression	
Viverravus rosei	148.81	PBDB + regression	
Viverravus sicarius	1594.41	PBDB + regression	
Vulpavus australis	1746.94	PBDB + regression	
Vulpavus palustris	2833.89	PBDB + regression	
Vulpavus profectus	3388.44	(88)	
Vulpes stenognathus	7331.97	(1)	
Vulpes velox	2197.86	(11)	
Washakius insignis	111.45	PBDB + regression	
Washakius izetti	73.44	PBDB + regression	
Continued on next page			

Dataset S1 – continued from previous page

Species	Mass (g)	Source	Suspicious
Washakius woodringi	48.28	PBDB + regression	
Wilsoneumys planidens	51.70	PBDB	
Worlandia inusitata	73.44	PBDB + regression	
Wyolestes apheles	1594.41	PBDB + regression	
Wyolestes iglesius	1288.90	PBDB + regression	
Wyonycteris chalice	8.61	PBDB + regression	
Xenicohippus craspedotum	10895.00	(4)	
Xenicohippus grangeri	12284.22	PBDB + regression	
Ysengrinia americana	110194.25	(1)	
Yumaceras figginsi	293607.76	(1)	
Yumaceras hamiltoni	247706.54	(1)	
Yumaceras ruminalis	314896.72	(1)	
Zapus burti	21.33	(1)	
Zapus rinker	27.28	PBDB + regression	
Zapus sandersi	18.92	(1)	
Zemiodontomys burkei	120.30	PBDB + regression	
Zetamys nebraskensis	60.34	(1)	

References

1. S. Tomiya, *The American Naturalist* **182**, 196 (2013).
2. J. A. Baskin, *Palaeontologia Electronica* **14**, 26A (2011).
3. M. R. Dawson, *Swiss Journal of Palaeontology* **131**, 11 (2012).
4. R. T. McKenna, Potential for Speciation in Mammals Following Vast , Late Miocene Volcanic Interruptions in the Pacific Northwest, Masters, Portland State University (2011).
5. B. Sorkin, *Lethaia* **41**, 333 (2008).
6. T. E. Williamson, S. L. Brusatte, T. D. Carr, A. Weil, B. R. Standhardt, *Journal of Systematic Palaeontology* **10**, 625 (2012).
7. G. P. Wilson, *et al.*, *Nature* **483**, 457 (2012).
8. L. B. Albright, *Biostratigraphy and Vertebrate Paleontology of the San Timoteo Badlands, Southern California* (University of California Press, Berkeley, 2000).
9. E. L. Simons, *Transactions of the American Philosophical Society* **50**, 3 (1960).
10. R. Stirton, *American Journal of Science* **24**, 46 (1932).
11. F. A. Smith, J. Brown, J. Haskell, S. Lyons, *The American Naturalist* **163**, 672 (2004).
12. R. Martin, H. Goodwin, J. Farlow, *Journal of Vertebrate Paleontology* **22**, 137 (2002).
13. P. Robinson, *Peabody Museum of Natural History Bulletin* **21**, 1 (1966).
14. J. W. Gidley, *Proceedings of the United States National Museum* **57**, 651 (1920).

15. E. C. Kirk, B. a. Williams, *Journal of human evolution* **61**, 156 (2011).
16. K. D. Rose, K. Kumar, R. S. Rana, A. Sahni, T. Smith, *Journal of Paleontology* **87**, 842 (2013).
17. W. A. Clemens, T. E. Williamson, *Journal of Vertebrate Paleontology* **25**, 208 (2005).
18. W. W. Dalquest, *Journal of Mammalogy* **59**, 269 (1978).
19. M. Cassiliano, *Rocky Mountain Geology* **43**, 41 (2008).
20. W. A. Clemens, *Palaeontologica Electronica* **14**, 22A (2011).
21. J. R. Macdonald, *Journal of Paleontology* **30**, 615 (1956).
22. C. Soligo, R. D. Martin, *Journal of human evolution* **50**, 414 (2006).
23. C. S. Scott, *Journal of Paleontology* **77**, 745 (2003).
24. E. R. Hall, *Journal of Mammalogy* **11**, 146 (1930).
25. M. C. Muhlbachler, N. Solounias, *Journal of Mammalian Evolution* **13**, 11 (2006).
26. O. Hay, *Proceedings of The United States National Museum* **44**, 569 (1969).
27. P. O. McGrew, *Geological Series of Field Museum of Natural History* **6**, 341 (1939).
28. C. Scott, *Canadian Journal of Earth Sciences* **41**, 237 (2004).
29. W. Sinclair, *Proceedings of the American Philosophical Society* **54**, 73 (1915).
30. B. MacFadden, *Paleobiology* **12**, 355 (1986).
31. M. J. Novacek, *PaleoBios* **24**, 1 (1977).
32. J.-P. Zonneveld, G. F. Gunnell, *Journal of Vertebrate Paleontology* **23**, 652 (2003).
33. H. McDonald, *Bulletin of the Florida Museum of Natural History* **45**, 313 (2005).
34. X. Wang, O. Carranza-Castañeda, J. J. Aranda-Gómez, *Journal of Systematic Palaeontology* **12**, 291 (2014).
35. R. H. Tedford, L. G. Barnes, C. E. Ray, *Proceedings of the San Diego Society of Natural History* **29**, 11 (1994).
36. W. B. Scott, G. L. Jepsen, A. E. Wood, *Transactions of the American Philosophical Society* **28**, 155 (1937).
37. F. Loomis, *Journal of Mammalogy* **13**, 358 (1932).
38. X. Wang, R. H. Tedford, B. E. Taylor, *Bulletin of the American Museum of Natural History* **243**, 2 (1999).
39. W. D. Matthew, *Bulletin of the American Museum of Natural History* **14**, 1 (1901).
40. Z. J. Tseng, J. K. O'Connor, X. Wang, D. R. Prothero, *Geodiversitas* **31**, 743 (2009).
41. C. S. Scott, D. N. Spivak, A. R. Sweet, H. Sues, *Canadian Journal of Earth Sciences* **50**, 355 (2013).
42. C. Stock, *Proceedings of the National Academy of Sciences* **23**, 48 (1937).
43. S. Zack, T. Penkrot, D. W. Krause, M. C. Maas, *Acta Palaeontologica Polonica* **50**, 809 (2005).
44. J. L. Wortman, C. Earle, *Bulletin of the American Museum of Natural History* **5**, 159 (1893).

45. R. Secord, *The Tiffanian Land-Mammal Age (Middle and Late Paleocene) in the Northern Bighorn Basin , Wyoming* (University of Michigan, 2008).
46. J. R. Macdonald, *Journal of Paleontology* **25**, 257 (1951).
47. O. Hay, *Bulletin of the University of Texas* **71**, 2 (1916).
48. Z. Johanson, *Journal of Paleontology* **70**, 1023 (1996).
49. K. D. Rose, S. G. B. Chester, R. H. Dunn, D. M. Boyer, J. I. Bloch, *American journal of physical anthropology* **146**, 281 (2011).
50. D. Kelley, A. Wood, *Journal of Paleontology* **28**, 337 (1954).
51. J. A. Baskin, *Journal of Vertebrate Paleontology* **24**, 709 (2004).
52. C. Stock, *Boletin de la Sociedad Geologica Mexicana* **13**, 69 (1948).
53. G. T. Mac Intyre, *Bulletin of the American Museum of Natural History* **131**, 115 (1966).
54. G. S. Bever, *The Southwestern Naturalist* **48**, 249 (2003).
55. T. H. Patton, B. E. Taylor, *Bulletin of the American Museum of Natural History* **150**, 347 (1973).
56. C. Grohé, *et al.*, *Die Naturwissenschaften* **97**, 1003 (2010).
57. B. W. Brook, D. M. J. S. Bowman, *Journal of Biogeography* **31**, 517 (2004).
58. C. T. Madden, J. E. Storer, *Canadian Journal of Earth Sciences* **22**, 1345 (1985).
59. J. A. Lillegraven, *Bulletin of the American Museum of Natural History* **158**, 223 (1977).
60. S. G. B. Chester, K. C. Beard, *Annals of Carnegie Museum* **80**, 159 (2012).
61. W. Korth, *Transactions of the Nebraska Academy of Sciences* **20**, 97 (1993).
62. B. E. Taylor, S. D. Webb, *American Museum Novitates* **2596**, 1 (1976).
63. G. L. Jepsen, *Proceedings of the American Ph* **71**, 255 (1932).
64. E. D. Cope, *Proceedings of the American Philosophical Society* **12**, 542 (1871).
65. A. Wood, *Transactions of the American Philosophical Society* **52**, 3 (1962).
66. R. Zakrzewski, *Journal of Mammalogy* **72**, 104 (1991).
67. R. C. Fox, C. S. Scott, *Journal of Paleontology* **85**, 537 (2011).
68. J. Lim, L. Martin, R. Wilson, *Journal of Paleontology* **75**, 1043 (2001).
69. J. S. Mellett, *American Museum Novitates* **2387**, 1 (1969).
70. J. Becker, J. White, *Journal of Vertebrate Paleontology* **1**, 211 (1981).
71. M. R. Dawson, K. C. Beard, *Annals of Carnegie Museum* **76**, 135 (2007).
72. C. A. L. Mora, A. L. V. Zamora, *Revista Geologica de America Central* **33**, 75 (2005).
73. C. L. Gazin, *Carnegie Institution of Washington* **404**, 55 (1930).
74. K. Rose, D. Krause, *Proceedings of the American Philosophical Society* **126**, 26 (1982).
75. M. C. Coombs, *Bulletin of the American Museum of Natural History* **164**, 1 (1979).
76. L. N. Carraway, *Western North American Naturalist* **70**, 144 (2010).

77. X. Wang, *Bulletin of the American Museum of Natural History* **221**, 1 (1994).
78. F. Loomis, *American Journal of Science* **31**, 65 (1911).
79. B. Van Valkenburgh, *Integrative and comparative biology* **47**, 147 (2007).
80. H. F. Osborn, *American Museum Novitates* **639**, 1 (1933).
81. B. Beatty, L. Martin, *PaleoBios* **29**, 29 (2009).
82. S. Strait, *Journal of Vertebrate Paleontology* **21**, 322 (2001).
83. W. B. Scott, G. L. Jepsen, *Transactions of the American Philosophical Society* **28**, 363 (1940).
84. I. Ferrusquía-Villafranca, *Journal of Vertebrate Paleontology* **26**, 989 (2006).
85. J. I. Bloch, M. T. Silcox, D. M. Boyer, E. J. Sargis, *Proceedings of the National Academy of Sciences of the United States of America* **104**, 1159 (2007).
86. M. F. Skinner, C. W. Hibbard, *Bulletin of the American Museum of Natural History* **148**, 1 (1972).
87. N. Egi, *Palaeontology* **44** (2001).
88. T. E. Williamson, S. L. Brusatte, *PloS one* **8**, e75886 (2013).