Appendix 4 = Taxon age ranges used in tip-dating analysis, and their source.

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| **Taxon** | **Age Range (Ma)** | **References** |
| Acrophoca | 5.93 – 7.10 | Ehret et al., 2012 |
| Allocyon | 29.75 – 30.6 | Albright et al., 2008 |
| Allodesmus | 9.1 – 16.0 | Prothero et al., 2001; Boessenecker and Churchill, 2018 |
| Amphicticeps | 23 – 31.15 | Wang et al., 2005; Daxner-Höck et al., 2017 |
| Amphictis | 13.65 – 25.6 | Luterbacher et al., 2004; Agusti et al., 2001 |
| Arctodus | 0.01 – 1.8 | Scott and Cox, 1993 |
| Brachypsalis | 11 – 18.9 | Tedford et al., 2004; Schultz, 2016 |
| Broiliana | 13.65 – 23.03 | Baskin, 2004; Collier and Huin, 1978 |
| Desmatophoca | 16.0 – 23.03 | Prothero et al., 2001a; Barnes, 1987 |
| Devinophoca | 11.61 – 13.65 | Sabol and Holec, 2002 |
| Enaliarctos barnesi | 26.4 – 28.1 | Prothero et al., 2001b; Poust and Boessenecker, 2018 |
| Enaliarctos emlongi | 19.1 – 20.2 | Prothero et al., 2001a, 2001b; Poust and Boessenecker, 2018 |
| Enaliarctos mealsi | 21.5 – 24 | Scheirer and Magoon, 2007; Poust and Boessenecker, 2018 |
| Enaliarctos mitchelli | 19.1 – 24 | Prothero et al., 2001b; Scheirer and Magoon, 2007; Poust and Boessenecker, 2018 |
| Enaliarctos tedfordi | 27.40 – 28.10 | Prothero et al., 2001b; Poust and Boessenecker, 2018 |
| Hemicyon | 7.24 – 16.9 | Tedford and Frailey, 1976; Agusti et al., 2001; Bastl et al., 2018 |
| Hesperocyon | 24.8 – 40.4 | Wang, 1994 |
| Imagotaria | 7.30 – 11.61 | Chang et al., 1998; Scheirer and Magoon, 2007 |
| Kolponomos | 16.0 – 23.03 | Jacobs et al., 2009; Poust and Boessenecker, 2018 |
| Megalictis | 18.5 – 22.7 | Valenciano et al., 2016; Albright et al., 2008 |
| Mustelavus | 24.8 – 34.5 | Baskin and Tedford, 1996; Prothero et al., 2004; McDonald, 1972 |
| Neotherium | 14.5 – 16.4 | Pyenson et al., 2009 |
| Oligobunis | 15.97 – 25.9 | White, 1947; Morgan, 1993; Albright et al., 2008 |
| Paragale | 20.43 – 23.03 | Petter, 1967 |
| Phoberogale | 20.5 – 34 | de Bonis, 2013; Agusti et al., 2001 |
| Pinnarctidion | 17.3 – 24 | Poust and Boessenecker, 2018; Tedford, 1987 |
| Piscophoca | 5.93 – 7.10 | Ehret et al., 2012 |
| Plesiogale | 15.97 – 20.43 | Ginsburg and Bonneau, 1995; Agusti et al., 2001 |
| Pontolis | 6.5 – 8.7 | Prothero et al., 2001c |
| Potamotherium | 20.0 – 24.6 | Rabi et al., 2017; Agusti et al., 2001 |
| Promartes | 17.5 – 27.8 | Baskin, 1998; Morgan and Lucas, 2002; Tedford et al., 2004 |
| Promephitis | 3.2 – 11.1 | Wang and Qui, 2004; Agusti et al., 2001 |
| Proneotherium | 16.6 – 17.3 | Prothero et al., 2001a |
| Prototaria | 15.5 – 16.0 | Kohno et al., 1994 |
| Pseudobassaris | 27.6 – 30.3 | Luterbacher et al., 2004; Agusti et al., 2001 |
| Pteronarctos | 16.6 – 20.7 | Prothero et al., 2001a; Poust and Boessenecker, 2018 |
| Puijila | 21 - 24 | Jessberger, 1988; Rybczynski et al., 2009 |
| Semantor | 2.58 – 5.33 | Orlov, 1933 |
| Simocyon | 4.9 – 11.6 | Wang, 1997; Tedford et al., 2004; Spassov and Geraads, 2011 |
| Sthenictis | 9.0 – 17.5 | Tseng et al., 2009 |
| Stromeriella | 13.65 – 20.43 | Dehm, 1950; Ginsburg, 1969; Collier and Huin, 1979 |
| Temnocyon | 22.8 – 30.6 | Albright et al., 2008 |
| Thalassoleon | 5.3 – 8.0 | Barnes, 1989; Powell et al., 2007 |
| Zodiolestes | 17.5 – 24.8 | Hochstein, 2007; Alroy, 2000; Tedford et al., 2004 |

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