**Table S1. List of squirrel species included in this study.** For each species the number of specimens (n), geographical distribution, habitat and dietary preferences and locomotion, together with the references for the data sources are given. Thorington *et al.* [S1] is used as a general reference for habitat and feeding preferences for extant squirrels. Dietary preferences are listed from the most important to the least important items.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Subfamily | Tribe | Species | n | Distribution | Habitat preferences | Dietary preferences | References |
| ? | ? | *Douglassciurus jeffersoni* (fossil) | 1 | North America | - | - | S2-S3 |
| Sciurillinae |  | *Sciurillus pusillus* | 7 | N South America | tropical rainforest | bark gleaner | S4-S7 |
| Ratufinae |  | *Ratufa bicolor* | 10 | SE Asia and Indonesia | tropical rainforest, tropical deciduous forest | nuts, fruits, leaves, flowers, sap, bark | S8-S10 |
| Sciurinae | Sciurini | *Microsciurus flaviventer* | 10 | Amazon Basin | tropical rainforest | insects, sap and other exudates obtained gnawing wood | S4,S11 |
|  |  | *Rheithrosciurus macrotis* | 2 | Borneo | tropical rainforest | fruits, nuts, thick-shelled seeds, insects | S12-S13  |
|  |  | *Sciurus vulgaris* | 10 | Europe, N and central Asia | coniferous forest, deciduous forest, Mediterranean forest | conifer nuts and seeds, fruits, buds, flowers, shoots, herbs | S14-S16 |
|  |  | *Tamiasciurus hudsonicus* | 10 | North America | coniferous forest, deciduous forest | conifer nuts and seeds, seeds of deciduous trees, flowers, buds, fresh fruits, tree sap, bark, insects | S17-S20 |
|  | Pteromyini | *Aeromys tephromelas* | 1 | Malay Peninsula and Indonesia | tropical rainforest | fruits, nuts, seeds and other plant material | S21 |
|  |  | *Belomys pearsonii* | 4 | SE Asia | warm-temperate forest, deciduous forest, mixed deciduous-coniferous forest | leaves, fruits, nuts, seeds and other plant material | S22  |
|  |  | *Eupetaurus cinereus* | 1 | Himalaya (Pakistan) | rocky areas (highland), dry conifer forest | pine needles | S23 |
|  |  | *Glaucomys volans* | 7 | E North America and certain areas of Central America | deciduous forest, mixed deciduous-coniferous forest | nuts, seeds, fruits, fungi, lichens, moss, bark, animal matter | S24-S27; |
|  |  | *Hylopetes lepidus* | 7 | Indonesia (Java and Bangka) | tropical rainforest | unknown | S28 |
|  |  | *Iomys horsfieldii* | 3 | Indonesia | tropical rainforest (prefers less dense areas), plantations | fruits | S29  |
|  |  | *Petaurillus kinlochii* | 1 | Indonesia (Malaysia) | tropical rainforest (prefers less dense areas), plantations | Unknown | S30 |
|  |  | *Petaurista petaurista* | 10 | Himalaya, SE Asia, Indonesia | tropical rainforest (prefers less dense areas), warm-temperate forest, coniferous forest, deciduous forest, plantations | leaves, seeds, fruits, flowers, buds, bark and lichens | S31-S34 |
|  |  | *Petinomys genibarbis* | 10 | Malay Peninsula and Indonesia | tropical rainforest (secondary forests), plantations | unknown | S35 |
|  |  | *Pteromys volans* | 1 | N Eurasia | coniferous forest, mixed deciduous-coniferous forest | leaves, pine needles, buds, bark, lichens and fruits | S36-S38 |
|  |  | *Pteromyscus pulverulentus* | 1 | Malay Peninsula and Indonesia | tropical rainforest | unknown | S39 |
|  |  | *Trogopterus xantiphes* | 6 | central China | mixed deciduous-conifer forest, rochy areas | leaves | S40 |
| Callosciurinae |  | *Callosciurus erythraeus* | 10 | SE continental Asia | tropical rainforest (highland), warm-temperate forest, mixed deciduous-coniferous forest | fruits, insects, flowers and other vegetable matter, bird eggs | S41 |
|  |  | *Dremomys rufigenis* | 5 | SE continental Asia | tropical rainforest (highland) | insects, fruits, nuts, seeds and other plant material | S42 |
|  |  | *Exilisciurus exilis* | 6 | Borneo | tropical rainforest (highland) | bark gleaner, insects | S9 |
|  |  | *Funambulus palmarum* | 8 | India and Sri Lanka | tropical deciduous forest, tropical rainforest, plantations | fruits, nuts, buds, young shoots, bark, nectar, insects | S43 |
|  |  | *Lariscus insignis* | 10 | Malay Peninsula and Indonesia | tropical rainforest, secondary forests | fruits, insects, buds of *Rafflesia* flowers\* | S9, S44-S45 |
|  |  | *Menetes berdmorei* | 10 | Malay Peninsula | tropical rainforest, plantations | seeds, leaves, fruits | S46-S47 |
|  |  | *Nannosciurus melanotis* | 10 | Indonesia | tropical rainforest | bark gleaner | S48-S49 |
|  |  | *Prosciurillus leucomus* | 8 | Sulawesi | tropical rainforest, tropical deciduous forest, coastal areas | fruits, insects | S50 |
|  |  | *Rhinosciurus laticaudatus* | 7 | Malay Peninsula and Indonesia | tropical rainforest (lowland and highland) | ants and termites, other invertebrates | S13, S51 |
|  |  | *Sundasciurus altitudinis* | 10 | Sumatra | tropical rainforest (highland) | seeds | S52 |
|  |  | *Tamiops mcclellandii* | 5 | SE Asia | tropical rainforest, warm-temperate forests, plantations | insects, fruits and other vegetable matter | S53 |
| Xerinae | Xerini | *Atlantoxerus getulus* | 10 | NW Africa | shrubland, open woodland, temperate grassland, desert, rocky areas | seeds , fruits, snails | S54 |
|  |  | *Spermophilopsis leptodactylus* | 1 | loess steppes SE Caspian Sea | sandy desert | seeds, fruits, bulbs, insects, roots and other vegetation | - |
|  |  | *Xerus erythropus* | 10 | central Africa | open woodlands, grasslands, swamp forest and mangrove, secondary forest | seeds, fruits, leaves, flowers, other vegetable matter, insects and small vertebrates | S55-S57 |
|  | Protoxerini | *Epixerus ebii* | 3 | coastal W Africa | tropical rainforest (lowland and highland), tropical deciduous forest | nuts, fruits, insects | S58 |
|  |  | *Funisciurus congicus* | 10 | W-central Africa | tropical deciduous forest, coastal palm groves | seeds, fruits, nuts, stems, shoots and occasionally insects | S59-S60 |
|  |  | *Heliosciurus gambianus* | 10 | tropical central Africa | woodland savannah, tropical deciduous forest, seasonally flooded grassland, rainforest, plantations | fruits, seeds, nuts, insects, acacia pods, small vertebrates | S56-S57,S61 |
|  |  | *Myosciurus pumilio* | 2 | W-central Africa | tropical rainforest | bark gleaner | S58 |
|  |  | *Paraxerus ochraceus* | 10 | Kenya, Tanzania | Savannah, tropical deciduous forest, riparian tropical forests | fruits, seeds, buds, flowers, roots, buds, acacia gum, small animals | S57,S62 |
|  |  | *Protoxerus stangeri* | 10 | W and Central Africa | tropical rainforest, tropical deciduous forest, secondary forest, plantations | nuts, fruits, seeds and other plant material, arthropods | S58,S63 |
|  | Marmotini | *Ammospermophilus leucurus* | 2 | W USA | arid plains, desert, rocky areas | stems and roots, seeds, insects | S64 |
|  |  | *Cynomys ludovicianus* | 7 | Central USA | arid grasslands | grasses and forbs | S65 |
|  |  | *Marmota marmota* | 10 | central and Alpine mountains of Europe | alpine meadow, steppe | grasses and forbs, seeds, fruits | S66 |
|  |  | *Sciurotamias davidianus* | 6 | mountains of China | rocky areas | seeds, nuts | S53,S67-S69 |
|  |  | *Tamias striatus* | 10 | E North America | deciduous forest | large seeds (acorns), nuts, insects, nesting birds and other small animals, fungi | S70-S72 |
|  |  | *Urocitellus undulatus* | 10 | central Asian steppe | steppe, semidesert, savannah | green shoots, leaves, flowers, seeds, opportunistically may consume insects and small animals | S53, S73 |

\*Other *Lariscus species*, such as *L.* *obscurus*, feed primarily on fruits and seeds with insects being also a major staple in their diets [45]. *L. insignis* is assumed to be primarily frugivore in our analyses

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