**Table 14.1**. Selected studies on *Trachypithecus* and *Presbytis* langurs in Southeast Asia. When multiple groups were studied, the main study group or a representative study group is selected for range and group composition

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Species | Site (duration mo) | Sympatric langur\* | Range of study group (ha) | Composition main group (adM, adF, subad, juv, inf (total)) | Max day range (m) | Density (grps km-2) in study area | Leaves (young, mature) | Flower | Whole fruits (fruits, seeds) | Reference |
| *T. auratus* | Pangandaran (25) | no | 7 | 4 / 13 / 11 / 3 / 2 / (33) | - | 14.0 | 80 | 10 | 10 | Brotoisworo 1983 |
| *T. auratus* | Pangandaran (22) | no | 7 | 1 / 7 / 2 / 3 / 1 (14) | 700 | 25.0 | 56 (46,10) | 14 | 32 | Kool 1992, 1993 |
| *T. auratus* | Bali Barat (19) | no | 17 | 1/ 10 / 2 / 6 / 1 (20) | 1,350 | 1.9 | 46 (33,10) | 6 | 48 (42,6) | Vogt 2003 |
| *T. auratus* | Bali Barat (19) | no | 10 | 1 / 2 / 4 / 0 / 0 (7) | 830 | 1.9 | 57 (41,6) | 8 | 34 (32,1) | Vogt 2003 |
| *T. auratus* | Gede-Pangrango (11) | *P. comata* | 21 | 1 / 8 / 1 / 5 / 4 (19) | 862 | 3.1 | 64 | 16 | 17 | Beckwith 1995 |
| *T. auratus* | Cepu (12) | no | 43 | 1 / 6 / 1 / 0 (8) | 1,150 | 0.2 | 86 (45,41) | 4 | 10 | Djuwantoko 1991 |
|  |  |  |  |  |  |  |  |  |  |  |
| *T. selangorensis* | Kuala Selangor (17) | no | 20 | 1 / 23 / 11 / 7 / 5 (47) | 500 | 5.0 | - | - | - | Bernstein 1968 |
| *T. selangorensis* | Rantau Panjang (2) | no | 4 | 2 / 10 / 2 / 5 / 3 (22) | 200 | - | - | - | - | Furuya 1961 |
|  |  |  |  |  |  |  |  |  |  |  |
| *T. cristatus* | Gn Padang (3) | no | 20 | 1 / 10 / 5 / 0 / 5 (22) | - | 5.0 | 63 | 0 | 37 | Akbar et al. 2019 |
|  |  |  |  |  |  |  |  |  |  |  |
| *T. obscurus* | Lima Blas (12) | *P. siamensis* | - | (17) | - | 6.7 | - | - | - | Bernstein 1967 |
| *T. obscurus* | Kuala Lompat (12) | *P. siamensis* | 33 | 2 / 7 / 2 / 4 / 2 (17) | 559 | 3.6 | 58 (36,22) | 7 | 35 (32,3) | Curtin 1980 |
| *T. obscurus* | Kuala Lompat (7) | *P. siamensis* | 29 | (10) | 950 | 3.0 | 48 | 5 | 47 | MacKinnon,MacKinnon 1980 |
| *T. obscurus* | Kuala Lompat (21) | *P. siamensis* | 21 | 1 / 6 / 2 / 5 / 0 (14) | 815 | 6.0 | 48 (33,6) | 11 | 34 (25,9) | Hardy 1988 |
| *T. obscurus* | Bangi (11) | *P. siamensis* | 2 | 1 / 7 / 4 / 3 / 3 (18) | 825 | - | 51 | 8 | 40 | Ruslin et al. 2014; 2018 |
| *T. obscurus* | Teluk Bahan (18) | no | 13 | 1 / 8 / 1 / 4 / 0 (14) | - | - | 63 | 20 | 14 | Leen et al. 2019 |
|  |  |  |  |  |  |  |  |  |  |  |
| *P. siamensis* | Lima Blas (12) | *T. obscurus* | - | (15) | - | 5.3 | - | - | - | Bernstein 1967 |
| *P. siamensis* | Kuala Lompat (12) | *T. obscurus* | 21 | 2 / 8 / 2 / 4 / 2 (18) | 754 | 5.0 | 35 (24,11) | 6 | 56 (48,8) | Curtin 1980 |
| *P. siamensis* | Kuala Lompat (7) | *T. obscurus* | 21 | (9) | 1,150 | 8.0 | 43 | 15 | 43 | MacKinnon,MacKinnon 1980 |
| *P. siamensis* | Kuala Lompat (14) | *T. obscurus* | 29 | (15) | 1,360 | 7.2 | - | - | - | Bennett 1983 |
| *P. siamensis* | Sungai Tekam (27) | *T. obscurus* | 15 | (14) | 935 | 3.4 | 34 (13,21) | 4 | 60 | Johns 1983 |
|  |  |  |  |  |  |  |  |  |  |  |
| *P. rubicunda* | Sepilok (13) | *P. sabanus* | 67 | (6) | 1670 | - | 38 (37,1) | 11 | 49 (19,30) | Davies 1984 |
| *P. rubicunda* | Tanjung Putting (9) | *T. cristatus* | 99 | 1 / 3 / 1 / 3 / 0 (8) | - | - | 36 | 12 | 52 | Supriatna et al. 1986 |
| *P. rubicunda* | Danum Valley (25) | *P. sabanus* | 21 | (8-12) | 2,140 | - | 46 (46,0) | 2 | 50 (12,38) | Hanya and Bernard 2012 |
| *P. rubicunda* | Sebangau (12) | no | 108 | 1 / 3 / 0 / 3 / 0 (7) | 2,040 | 2.5 | 11 (8,3) | 3 | 83 (7,76) | Ehlers Smith et al. 2013ab |
| *P. rubicunda* | Tawau (18) | *P. sabanus* | 79 | (8) |  | 2.0 | 61 | - | - | Lakim 2008 |
| *P. rubicunda* | Palung (9) | no | 38 | (11) | 746 | 3.0 | - | - | 83 | Van Schaik et al. 1992 |
| *P. rubicunda* | Palung (65) | no | 90 | (6) | - | 3.0 | 31 | 6 | 60 (34,26) | Clink et al. 2017 |
| *P. rubicunda* | Wehea (7) | *P. canicrus / P frontata* |  | 1 / 3 / 4 / 3 (11) | - | - | - | - | - | D’Agostino et al. 2016 |
|  |  |  |  |  |  |  |  |  |  |  |
| *P. comata* | Gede-Pangrango (7) | *T. auratus* | 15 | 1 / 2 / 2 / 1 / 0 (6) | 875 | 4.5 | 70 (65, 5) | 17 | 9 (6, 3) | Sujatnika 1992 |
| *P. comata* | Haurbentes (7) | no | 75 | 1 / 1 / 2 / 0 / 0 (4) | - | 1.3 | - | - | - | Sujatnika 1992 |
| *P. comata* | Brussel (6) | no | 20 | 1 / 1 / 2 / 2 / 0 (6) | - | - | 26 (13, 3) | 2 | 58 (29,29) | Harjanti 1996 |
| *P. comata* | Kamojang (24) | no | 38 | 1 / 4 / 0 / 4 / 3 (12) | 900 | 1.9 | 65 (59, 6) | 7 | 14 (13, 1) | Ruhiyat 1983 |
| *P. comata* | Dieng (8) | *T. auratus* | 55 | 1 /4 /1 /1/2 (9) | 1,146 | - | 36 (31, 5) | 3 | 55 (5, 29) | Suryana 2010 |
| *P. comata* | Patenggan (15) | no | 14 | 2 / 3 / 2 / 2 / 2 / 1 (10) | - | 5.8 | - | - | - | Ruhiyat 1983 |
|  |  |  |  |  |  |  |  |  |  |  |
| *P. canicrus* | Kutai (17) | *P. frontata* | - | (8) | - | 2.6 | 66 | - | 28 | Rodman 1973 |
|  |  |  |  |  |  |  |  |  |  |  |
| *P. femoralis* | Perawang (19) | *T. cristatus* | 32 | 1 / 3 / 3 / 2 / 0 (9) | 1,500 | 4.2 | 55 (48, 7) | 7 | 52 (34, 14) | Megantara 1989a |
| *P. melalophos* | HPPB Andalas (7) | no | 19 | 1 / 2 / 1 / 0 / 0 (4) | - | 4.0 | - | - | - | Fitri et al. 2013 |
|  |  |  |  |  |  |  |  |  |  |  |
| *P. sabana* | Silabukan (18) | *P. rubicunda* | 45 | (7) | 540 | - | 60 | 1 | 40 (19, 21) | Mitchell 1994 |
| *P. sabana* | Tabin (18) | *P. rubicunda* | 35 | (9) | 740 | - | 78 (45, 5) | 3 | 19 (2, 17) | Mitchell 1994 |
|  |  |  |  |  |  |  |  |  |  |  |
| *P. thomasi* | Ketambe | no | 38 | (9) | 1,070 | 3.7 |  |  | 49 | Assink, van Dijk 1990 |
| *P. thomasi* | Ketambe (24) | no | 30 | 1 / 3 / 4 / 0 / 0 (8) |  |  | 44 (31, 13) | 6 | 36 | Sterck 1995 |
| *P. thomasi* | Bukit Lawang (7) | *T. cristatus* | 16 | 1 / 3 / 2 / 0 / 0 (6) | 1,300 | 2.0 | 34 | 14 | 51 | Gurmaya 1989 |
| *P. thomasi* | Bungara (20) | *T. cristatus* | 12 | 1 / 4 / 1 / 0 / 2 (8) | 1,250 | 9.6 | 39 | 2 | 55 | Gurmaya 1989 |
|  |  |  |  |  |  |  |  |  |  |  |
| *P. potenziani* | Betumonga (7) | no | 38 | 1 / 1 / 1 / 2 /1 (6) | 1,120 | 7.4 | 55 | - | 32 | Fuentes 1994 |
|  |  |  |  |  |  |  |  |  |  |  |
| *P. siberu* | Peleonan (19) | no | 30 | 1 / 3 / 2 / 0 / 1 (7) | - | 3.2 | 35 | 5 | 55 | Hadi 2011 |
| *P. siberu* | Pungut (3) | no | 30 | 1 / 1 / 0 / 2 / 0 (4) | 500 | - | 38 | 10 | 52 | Rahayuni 2007 |
| *P. siberu* | Sarabua (10) | no | 15 | 1 / 1 / 1 (3) | - | 4.0 | - | - | - | Watanabe 1981 |
| *P. siberu* | Gruka (20) | no | 30 | 1 / 1/ 1 (3) | - | 3.5 | - | - | - | Watanabe 1981 |

\* Sympatric langurs only refers to either *Presbytis* or *Trachypithecus* and not to the simakobu *Simias concolor* or the proboscis monkey *Nasalis larvatus*

**Table 14.2.** Habitat use of two sympatric langurs, maroon langur *P. rubicunda* and white-fronted langur *P. frontata* in Sungai Wain forest, eastern Borneo. Availability is based on 379 km of transect walks and use is based on the number of encounters (V. Nijman unpublished data).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Habitat type** | **Habitat availability** | **Habitat use** | | **Notes** |
|  | Survey effort in km (%) | Encounters with  *P. rubicunda* (%) | Encounters with  *P. frontata* (%) |  |
| Swamp | 46 (12) | 8 (11) | 7 (47) | preferred by *P. frontata* |
| Alluvial | 25 (7) | 14 (19) | 2 (13) |  |
| Slope | 247 (65) | 20 (27) | 2 (13) | avoided by both species |
| Flat | 39 (10) | 10 (14) | 3 (20) |  |
| Ridge | 22 (6) | 22 (30) | 1 (7) | preferred by *P. rubicunda* |

**Table 14.3.** Activity patterns of selected *Presbytis* and *Trachypithecus* langurs groups as percentage of all activities (all-male groups are excluded).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Species** | **Feeding** | **Resting** | **Moving** | **Social** | **Reference** |
| *T. obscurus* | 40.0 | 24.0 | 22.6 | 3.0 | Md-Zain and Chng, 2011 |
|  | 27.0 | 45.0 | 25.0 | - | Hardy 1989 |
|  | 34.0 | 46.0 | 20.0 | - | Raemaekers and Chivers 1980 |
|  | 24.8 | 43.5 | 24.4 | 6.4 | Leen et al. 2019 |
| *T. auratus* | 22.9 | 52.0 | 16.2 | 2.0 | Kool 1989 |
|  | 29.6 | 44.1 | 15.2 | 2.0 | Kool 1989 |
|  | 33.0 | 31.0 | 24.8 | 5.2 | Beckwith 1995 |
|  | 33.5 | 52.0 | 13.5 | 1.0 | Djuwantoko 1991 |
| *T. cristatus* | 12.1 | 46.3 | 37.8 | 3.8 | Akbar et al. 2019 |
| *P. potenziani* | 26.0 | 48.0 | 24.0 | 1.0 | Fuentes 1994 |
| *P. hosei* | 9.0 | 53.0 | 22.0 | 1.0 | Ramlee 2011 |
| *P. thomasi* | 31.7 | 60.4 | 4.9 | 3.0 | Sterck 1995 |
|  | 32.5 | 58.0 | 9.5 | - | Gurmaya 1989 |
|  | 24.7 | 66.8 | 8.5 | - | Gurmaya 1989 |
| *P. siamensis* | 40.0 | 47.0 | 15.0 | 3.0 | Bennett 1983 |
|  | 33.0 | 46.0 | 21.0 | - | Raemaekers and Chivers 1980 |
| *P. comata* | 29.3 | 63.0 | 4.7 | 3.0 | Ruhiyat 1983, 1991 |
| *P. femoralis* | 34.1 | 51.3 | 10.9 | - | Megantara 1989a |
| *P. rubicunda* | 29.3 | 48.0 | 14.2 | 0.4 | Ehlers-Smith 2013a. |