

Effects of different heat and light sources on the behaviour of captive reptiles

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Table S1. Lighting technologies and environmental conditions for species during observation periods 1, 2 and 3. First numbers displayed for solar power and lux are bask zone values whereas numbers in parentheses are ambient values.

| Species | Observation period | Lighting type provided | | | Environmental parameters | | | |
|-----------------------------|--------------------|-----------------------------------|-----------------------------|---|---------------------------|------------------------------------|---------------|---------------------------------|
| | | Mercury vapour lamp(s) | Incandescent lamp(s) | T5-HO lamps | Metal halide lamp | Bask zone surface temperature (°C) | Bask zone UVI | Solar Power (W/m ²) |
| <i>Geoclemys hamiltonii</i> | 1&3 | x2 Arcadia 160W D3 Mercury vapour | - | 1150mm hydroponic unit with x7 ProLite T5-HO and x1 14% Arcadia T5-HO | - | 31–32 | 2–3 | 40 (20) 4700 (4400) |
| | 2 | - | x2 Arcadia 100W Solar Flood | 1150mm hydroponic unit with x6 ProLite T5-HO and x2 14% Arcadia T5-HO | 250W Philips Master HPI-T | 31–32 | 2–2.5 | 100 (20) 5100 (4600) |

| | | | | | | | | | |
|-------------------------------------|-------|--|--------------------------------|--|------------------------------------|-------|---------|----------|-------------|
| <i>Varanus macraei</i> | 1 & 3 | x1 300W Osram Ultravitalux | - | 550mm hydroponic unit with x4 12% Arcadia T5-HO | - | 38–51 | 3–4.2 | 30 (3) | 1600 (1000) |
| | 2 | - | x2 Arcadia 150W Solar Flood | 550mm hydroponic unit with x4 12% Arcadia T5-HO | 150W Venture White-Lux Plus HIT | 37–50 | 0.3–0.4 | 250 (20) | 6300 (2700) |
| <i>Oxyuranus microlepidotus</i> | 1 & 3 | x3 Arcadia 160W D3 Mercury Vapour | - | x2 1150mm hydroponic units with x16 non-UVB emitting T5-HO | - | 30–36 | 2.7–3.1 | 40 (10) | 4700 (2750) |
| | 2 | - | x3 Arcadia 150W Solar Flood | x2 1150mm hydroponic units with x6 Arcadia 14% T5- HO and x10 non-UVB emitting T5-HO | 250W Philips Master HPI-T | 30–35 | 2.8–3.5 | 140 (20) | 5300 (4500) |

Table S2. Means and standard deviations of behaviours of three focal species across three lighting observation periods 1–3

| Observation period | Species | Standardised Locomotion | | Standardised Basking | | Standardised Resting | | mSPI | |
|--------------------|---------|-------------------------|------|----------------------|------|----------------------|------|------|------|
| | | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| 1 | Turtle | 0.58 | 0.38 | 0.30 | 0.41 | 0.09 | 0.10 | 0.55 | 0.24 |
| 2 | | 0.38 | 0.43 | 0.46 | 0.49 | 0.16 | 0.30 | 0.69 | 0.20 |
| 3 | | 0.73 | 0.38 | 0.10 | 0.30 | 0.11 | 0.20 | 0.58 | 0.08 |
| 1 | Lizard | 0.21 | 0.26 | 0.25 | 0.31 | 0.50 | 0.45 | 0.63 | 0.17 |
| 2 | | 0.14 | 0.17 | 0.25 | 0.35 | 0.61 | 0.41 | 0.62 | 0.23 |
| 3 | | 0.38 | 0.37 | 0.00 | 0.00 | 0.51 | 0.39 | 0.44 | 0.17 |
| 1 | Snake | 0.13 | 0.25 | 0.01 | 0.03 | 0.37 | 0.43 | 0.31 | 0.10 |
| 2 | | 0.18 | 0.31 | 0.02 | 0.06 | 0.23 | 0.36 | 0.27 | 0.13 |
| 3 | | 0.27 | 0.38 | 0.01 | 0.05 | 0.12 | 0.23 | 0.27 | 0.12 |