

## Appendix 1. Definitions of terms used

### Daily heterotherms

Endothermic species of mammals and birds that use daily torpor.

### Daily torpor

A period of controlled reduction of metabolism and body temperature in daily heterotherms lasting for less than one day, typically less than 12 hours. The timing and duration of daily torpor is controlled by the circadian clock which ensures that bouts of torpor alternate with the resumption of euthermic functions such as activity, foraging, and sleep within the 24 hour daily cycle.

### Ectotherm

An organism whose metabolic heat production is low and therefore its body temperature is usually close to that of the environment. Ectotherms generally lack insulation.

### Endotherm

An organism with the capacity for high metabolic heat production by the use of shivering and/or nonshivering thermogenesis.

### Eutherm (= normotherm)

The physiological state during which a heterothermic endotherm displays high (typically  $>> 30^{\circ}\text{C}$ ) body temperatures. These terms are used pragmatically, without intending to suggest that high body temperatures are always beneficial (the greek "eu") or normal (as torpor can be considered the normal state for many hibernators).

**Heterothermic endotherm**

An organism that is capable of homeothermic thermoregulation, but, at certain times of the day or the year, enters a state of torpor.

**Hibernation or multiday torpor**

A sequence of multiday torpor bouts, during which metabolism decreases significantly below basal metabolic rate and body temperature is often lowered, typically interrupted by periodic arousal episodes.

**Homeotherm**

An organism that maintains a more or less constant body temperature either *via* appropriate heat production or heat loss, or by living in a thermally stable environment.

**Hypometabolism**

A reduction of metabolic rate below basal metabolic rate that often is associated with decreased core body temperature but may be also associated with regional heterothermy only.

**Hypothermia**

A reduction of body temperature significantly below eutheria. Commonly viewed as an uncontrolled pathological reduction of body temperatures often due to drugs or extreme cold-exposure.

**Metabolic rate**

A measure of the total metabolic energy use. Can be quantified indirectly by measuring oxygen consumption or carbon dioxide production or heart rate or directly by measuring metabolic heat production.

**Torpor**

A period of a controlled reduction of metabolism, core body temperature, and other physiological processes. Torpor is a general term and can be daily or multiday.

For Review Only

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60