Archery Victoria			
Title:	Policy and Procedures Manual		
Subject:	Heat Stress Policy		
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0543. Heat Stress Policy

In Australia heat kills more people than any other weather related hazard. Archery is practiced all year round, but generally in the warmest months of the year and on hotter days. All participants, to some degree, will be affected by the heat.

1. What is heat stress?

Heat stress is the overall heat burden on the body from the combination of body heat, environmental sources and clothing.

In Australia shooting in hot conditions and direct sunlight is common, especially in summer. Archery Victoria has a duty of care to alert individuals, clubs and organising committees to the hazard and associated risks when shooting in extreme heat conditions.

2. What factors contribute to heat stress?

Factors that contribute to heat stress and affect the body's ability to disperse excess heat and maintain normal body temperature are:

- The work rate - the heavier the work, the greater the amount of metabolic heat produced.
- Ambient air temperature - the higher the ambient air temperature, the harder it is for the body to disperse metabolic heat and maintain body temperature by sweating.
- Humidity - the higher the humidity the lower the sweat evaporation rate.
- Air flow - the lower the rate of air flow (or wind speed) the lower the rate of sweat evaporation.
- Clothing - heavy or protective clothing reduces heat dispersion by trapping the heat within the clothing. This reduces the airflow, preventing evaporation of sweat and therefore dispersal of body heat.
- Radiant heat - e.g. standing in the sun or in the vicinity to heat sources such as ovens, furnaces, stage lighting, boilers etc

3. What are the Risks?

These vary from mild to severe. Those affected feel weak or dizzy. Symptoms respond well to rest in a cool place, frequent drinks of non-alcoholic fluid and removal of any heavy clothing.

4. Heat exhaustion

This results in the collapse of the affected person due to dehydration and an overloaded cardiovascular system. Symptoms include fainting, lethargy, headache, low blood pressure, nausea, clammy, pale or flushed skin and a normal to slightly elevated body temperature (>39°C).

Treatment includes removal of any heavy clothing, rest in a cool place and frequent drinks to replace fluid.

5. Heat stroke

This is a very serious condition that can result in death or permanent injury from brain damage. Signs of heat stroke include:

- Irritability;
- Confusion, disorientation;
- Incoherent speech;
- Hot, dry flushed skin;
- Convulsions;
- Loss of consciousness;
- Body temperature > 40°C;
- Cardiac arrest.

Immediate first aid must be given, while awaiting transfer to hospital. It is essential to cool the person affected by removing heavy clothing, moving to a cool place, sponging with water and vigorous fanning.

6. Heat Cramp

Heat cramp is characterised by painful spasms in one or more skeletal muscles. Heat cramp primarily occurs in persons who sweat profusely in heat without restoring their body's salt balance. Resting in a cool place and drinking saline solution normally alleviates cramp.

7. Who is responsible for preventing Heat Stress?

The chance of a person being exposed to excessive heat is potentially high due to the nature of how the sport of Archery is practised i.e. it is principally an outdoor activity.

Apart from a general lack of enjoyment and poor performances, playing sport in extreme weather conditions can result in heat cramps, heat exhaustion and ultimately heat stroke and death.

Archery Victoria, the clubs and the organising committee of the archery event have a duty of care to ensure all members and competitors are aware of the risks and hazards associated with competing outdoors. Ideally, events should be programmed to avoid periods of extreme heat.

Archers should be fully aware of the risks associated with outdoor archery. It is the competitor's responsibility to take all the necessary precautions to protect themselves against heat stress and ensure their own welfare and safety.

8. How Does the Body Manage the Heat?

A healthy person has a remarkable capacity for regulating body temperature. When air temperature is below skin temperature (~34^{o}C) the body's principal cooling mechanism is to radiate heat into the atmosphere.

When the air temperature is above skin temperature, the body absorbs radiant heat from the atmosphere, so the principal cooling mechanism is via the evaporation of sweat. However, there are a number of personal factors that inhibit the body's ability to manage the heat.

These factors include clothing. Wearing dark clothing may increase the absorption of heat from the environment as well as form barriers to evaporation. Always wear light weight, loose fitting and light coloured clothing.

9. Physical Condition

Individuals who are unfit and/or obese will produce far more metabolic heat during exercise and are much less efficient at dissipating that heat.

10. Dehydration

Sweating, inadequate fluid intake, consumption of alcohol, caffeine (coffee and tea) and certain medications can lead to fluid deficits. Without sufficient fluid the body cannot sweat.

11. Medical Condition

There are a range of medical conditions that interfere with the body's ability to manage heat. Probably the most common condition is cardio-vascular disease.

12. Age

Children (pre-pubescent) and older participants (>50 years age) are at an additional risk.

13. Repeated Exposure

Exposure to hot conditions on a previous day increases the risk of suffering heat stress for the current day. The effects of heat stress are cumulative.

14. Previous Heat Related Illnesses

Individuals who have a history of heat related illnesses are at risk of repeat occurrences.

15. Environmental Factors

Air temperature is a significant factor in how body temperature is managed. Other environmental factors, which affect the body's ability to manage heat, include humidity.

16. Relative Humidity (RH)

RH, expressed as a percentage, is a measure of the actual amount of water vapour in the atmosphere compared against the maximum possible water vapour for a given air temperature. The higher the Relative Humidity, the more saturated the atmosphere is with water vapour resulting in sweat increasingly pooling on the skin rather than evaporating.

17. Radiant Heat

Direct sunlight adds to the body's heat load.

18. Wind

Wind blowing in hot dry (low humidity) conditions adds to the body's heat load, with the reverse occurring in higher humidity conditions.

19. Heat Stress Models

Tools used for determining whether conditions which are safe for outdoor activities must make some attempt to measure the heat stress being placed on the participants and not simply measure air temperature.

There is a general belief that events should not continue when the air temperature reaches a certain level, usually 38^{o}C.

This policy although it appears to be simple ignores the comprehensive physiological data that is available regarding heat stress guidelines.

The commonly accepted method of determining potential heat stress is the 'Wet Bulb Globe Temperature' (WBGT). This is a composite method used to estimate the effect of temperature, humidity, wind speed and solar radiation on humans.

20. Why are the indices useful?

We often use the air temperature as an indicator of how comfortable we will feel when involved in sports or other physical activities. However, the air temperature is only one factor in the assessment of thermal stress.

In climates where other important factors, principally humidity, can vary widely from day to day, we need more than just the temperature for a more realistic assessment of comfort.

However, it is useful to be able to condense all the extra effects into a single number and use it in a similar way to the way we used the air temperature. The Wet Bulb Globe Temperature (WBGT) and the Apparent Temperature are indices which attempt to do this.

21. What causes thermal stress?

Human thermal comfort depends on environmental and personal factors. The four environmental factors are airflow (wind), air temperature, air humidity, and radiation from the sun and nearby hot surfaces. The personal factors are the clothing being worn and the person's level of physical activity.

Thermal sensation is also significantly affected by acclimatisation/adaptation. People living in hot climates have been shown to be comfortable at higher temperatures than those living in cooler climates.

In hotter conditions the body must shed heat to maintain thermal equilibrium. The cooling effect of evaporation of sweat from the skin becomes an important factor. The efficiency of this cooling depends on the humidity of the air. A high humidity reduces the effectiveness of evaporative cooling significantly. The amount of clothing will also affect this cooling efficiency due to its restriction of the air flow over the skin. Fabrics with low vapour permeability (those that don't "breathe") will increase the humidity of air near the skin.

In colder conditions, the body must either reduce heat loss (e.g. by taking shelter from the wind) or increase heat production, for example, by greater physical activity. In these conditions evaporation and air humidity are relatively unimportant factors. The cooling of the exposed parts of the body by the wind now becomes the most important external factor affecting thermal balance.

The effect of radiation is important under all temperature conditions. Excess radiation always acts to increase the heat load on a person. This can be of assistance under cold conditions, but under hot conditions it's an extra heat load that must be shed.

Of the four environmental factors, wind and radiation are very much influenced by the immediate surroundings. For example, wind speed is reduced by the sheltering effect of belts of trees and solar radiation is affected by short term localised phenomena such as cloudiness. If these factors are to be used as inputs, they are best measured on location, as values can vary significantly over relatively short distances. The remaining two factors (temperature and humidity) are less spatially variable and can be used to give an indication of the general comfort level of a region.

In order to make comparisons between areas, it is convenient to combine the effect of temperature and humidity into one index. This does not mean we can ignore the other environmental and non-environmental factors, but adjustments to the index value, either up or down, can be made to take them into account.

Most people use the temperature alone to provide some guide to the level of comfort. Generally this is quite reasonable because humidity doesn't often vary a lot, particularly in the tropics. However people moving from a less humid to more humid environment will immediately notice the effect of the greater humidity. In many sub-tropical regions of Australia the humidity is usually quite low, but occasionally can become quite high, again reducing comfort to those people not acclimatised.

Most sporting authorities recommend that for sport involving children and adolescents, regardless of the WBGT, activities should be cancelled when the air temperature (using a standard thermometer placed in a shaded area in direct air flow) reaches 34^{o}C.

You can estimate the average WBGT conditions in a given area by using the historical information provided by the Bureau of Meteorology on their website at http://www.bom.gov.au/climate/averages

Looking at the website the lower part of the Climate Averages page, choose your state, lookup the nearest observation site to your location, click on the station number. For afternoon conditions you should use the Mean Daily Maximum Temperature and Mean 3pm Relative Humidity.

Do not use this relative humidity for other times because relative humidity changes quite a bit during the day.

for example if we choose Brisbane regional office, in January we have a temperature of 29.4°c and relative humidity of 59%. From the tables below this gives an apparent temperature of about 32°C and a WBGT of about 30°C.

22. Steadman Apparent Temperature

Legend: Red values, apparent temperature above air temperature; blue values, apparent temperature below air temperature.

Apparent temperature (AT) from temperature and relative humidity - after Steadman 1994

Temperature (°C)

Relative Humidity (%)	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
0	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
5	16	17	18	19	20	21	22	23	24	25	26	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	44	45	46	47	48
10	17	18	19	20	21	22	23	24	25	26	27	28	29	31	32	33	34	35	36	37	38	39	41	42	43	44	45	46	48	49	50
15	17	18	19	20	21	22	24	25	26	27	28	29	30	31	33	34	35	36	37	38	40	41	42	43	45	46	47	48	50		
20	17	18	20	21	22	23	24	25	26	28	29	30	31	32	33	35	36	37	38	40	41	42	43	45	46	47	49	50			
25	18	19	20	21	22	24	25	26	27	28	29	31	32	33	34	36	37	38	40	41	42	44	45	46	48	49					
30	18	19	21	22	23	24	25	26	28	29	30	31	33	34	35	37	38	39	41	42	43	45	46	48	49						
35	19	20	21	22	23	25	26	27	28	30	31	32	34	35	36	38	39	40	42	43	45	46	48	49							
40	19	20	21	23	24	25	26	28	29	30	32	33	34	36	37	39	40	41	43	44	46	48	49								
45	19	21	22	23	24	26	27	28	30	31	32	34	35	37	38	40	41	43	44	46	47	49									
50	20	21	22	24	25	26	28	29	30	32	33	35	36	38	39	41	42	44	45	47	49	50									
55	20	22	23	24	25	27	28	30	31	32	34	35	37	38	40	42	43	45	46	48	50										
60	21	22	23	25	26	27	29	30	32	33	35	36	38	39	41	42	44	46	48	49											
65	21	22	24	25	27	28	29	31	32	34	35	37	39	40	42	43	45	47	49												
70	21	23	24	26	27	28	30	31	33	35	36	38	39	41	43	44	46	48	50												
75	22	23	25	26	28	29	31	32	34	35	37	38	40	42	44	45	47	49													
80	22	24	25	27	28	30	31	33	34	36	38	39	41	43	45	46	48	50													
85	23	24	26	27	29	30	32	33	35	37	38	40	42	44	45	47	49														
90	23	25	26	28	29	31	32	34	36	37	39	41	43	45	46	48	50														
95	23	25	26	28	30	31	33	35	36	38	40	42	43	45	47	49															
100	24	25	27	29	30	32	33	35	37	39	41	42	44	46	48	50															

AT above 50°C

23. Apparent Temperature as a Wind Chill

Legend: Colours added to visually delineate increasingly colder values.

Apparent temperature (AT) as a Wind Chill - after Steadman 1994

Temperature (°C)

Wind Speed (km/h)	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
0	-8	-7	-6	-5	-4	-3	-2	-1	1	2	3	4	5	6	8	9	10	11	12	14	15	16	17	19	20	21
2	-9	-8	-6	-5	-4	-3	-2	-1	0	1	2	4	5	6	7	8	10	11	12	13	15	16	17	18	20	21
4	-9	-8	-7	-6	-5	-4	-2	-1	0	1	2	3	4	6	7	8	9	10	12	13	14	15	17	18	19	21
6	-9	-8	-7	-6	-5	-4	-3	-2	-1	1	2	3	4	5	6	8	9	10	11	12	14	15	16	18	19	20
8	-10	-9	-8	-7	-5	-4	-3	-2	-1	0	1	2	4	5	6	7	8	10	11	12	13	15	16	17	19	20
10	-10	-9	-8	-7	-6	-5	-4	-2	-1	0	1	2	3	4	6	7	8	9	10	12	13	14	16	17	18	20
12	-11	-9	-8	-7	-6	-5	-4	-3	-2	-1	1	2	3	4	5	6	8	9	10	11	13	14	15	16	18	19
14	-11	-10	-9	-8	-7	-5	-4	-3	-2	-1	0	1	2	4	5	6	7	8	10	11	12	13	15	16	17	19
16	-11	-10	-9	-8	-7	-6	-5	-4	-3	-1	0	1	2	3	4	6	7	8	9	11	12	13	14	16	17	18
18	-12	-11	-10	-8	-7	-6	-5	-4	-3	-2	-1	1	2	3	4	5	6	8	9	10	11	13	14	15	17	18
20	-12	-11	-10	-9	-8	-7	-6	-4	-3	-2	-1	0	1	2	4	5	6	7	9	10	11	12	14	15	16	18
22	-13	-11	-10	-9	-8	-7	-6	-5	-4	-3	-1	0	1	2	3	4	6	7	8	9	11	12	13	15	16	17
24	-13	-12	-11	-10	-9	-7	-6	-5	-4	-3	-2	-1	1	2	3	4	5	6	8	9	10	12	13	14	15	17
26	-13	-12	-11	-10	-9	-8	-7	-6	-4	-3	-2	-1	0	1	2	4	5	6	7	9	10	11	12	14	15	16
28	-14	-13	-12	-10	-9	-8	-7	-6	-5	-4	-3	-1	0	1	2	3	5	6	7	8	9	11	12	13	15	16
30	-14	-13	-12	-11	-10	-9	-7	-6	-5	-4	-3	-2	-1	1	2	3	4	5	7	8	9	10	12	13	14	16
32	-14	-13	-12	-11	-10	-9	-8	-7	-6	-4	-3	-2	-1	0	1	3	4	5	6	7	9	10	11	13	14	15
34	-15	-14	-13	-12	-10	-9	-8	-7	-6	-5	-4	-3	-1	0	1	2	3	5	6	7	8	10	11	12	13	15
36	-15	-14	-13	-12	-11	-10	-9	-8	-6	-5	-4	-3	-2	-1	1	2	3	4	5	7	8	9	10	12	13	14
38	-16	-15	-13	-12	-11	-10	-9	-8	-7	-6	-5	-3	-2	-1	0	1	3	4	5	6	8	9	10	11	13	14
40	-16	-15	-14	-13	-12	-11	-9	-8	-7	-6	-5	-4	-3	-1	0	1	2	3	5	6	7	8	10	11	12	14
42	-16	-15	-14	-13	-12	-11	-10	-9	-8	-6	-5	-4	-3	-2	-1	1	2	3	4	5	7	8	9	11	12	13
44	-17	-16	-15	-14	-12	-11	-10	-9	-8	-7	-6	-5	-3	-2	-1	0	1	3	4	5	6	8	9	10	12	13
46	-17	-16	-15	-14	-13	-12	-11	-9	-8	-7	-6	-5	-4	-3	-1	0	1	2	3	5	6	7	9	10	11	13
48	-18	-16	-15	-14	-13	-12	-11	-10	-9	-8	-6	-5	-4	-3	-2	-1	1	2	3	4	6	7	8	9	11	12
50	-18	-17	-16	-15	-14	-12	-11	-10	-9	-8	-7	-6	-5	-3	-2	-1	0	1	3	4	5	6	8	9	10	12
52	-18	-17	-16	-15	-14	-13	-12	-11	-10	-8	-7	-6	-5	-4	-3	-1	0	1	2	4	5	6	7	9	10	11
54	-19	-18	-17	-15	-14	-13	-12	-11	-10	-9	-8	-6	-5	-4	-3	-2	-1	1	2	3	4	6	7	8	10	11
56	-19	-18	-17	-16	-15	-14	-13	-11	-10	-9	-8	-7	-6	-5	-3	-2	-1	0	2	3	4	5	7	8	9	11
58	-20	-18	-17	-16	-15	-14	-13	-12	-11	-10	-8	-7	-6	-5	-4	-3	-1	0	1	2	4	5	6	8	9	10
60	-20	-19	-18	-17	-16	-14	-13	-12	-11	-10	-9	-8	-6	-5	-4	-3	-2	-1	1	2	3	5	6	7	8	10
62	-20	-19	-18	-17	-16	-15	-14	-13	-11	-10	-9	-8	-7	-6	-5	-3	-2	-1	0	2	3	4	5	7	8	9
64	-21	-20	-19	-17	-16	-15	-14	-13	-12	-11	-10	-8	-7	-6	-5	-4	-2	-1	0	1	2	4	5	6	8	9
66	-21	-20	-19	-18	-17	-16	-14	-13	-12	-11	-10	-9	-8	-6	-5	-4	-3	-2	0	1	2	3	5	6	7	9
68	-21	-20	-19	-18	-17	-16	-15	-14	-13	-11	-10	-9	-8	-7	-6	-4	-3	-2	-1	0	2	3	4	6	7	8
70	-22	-21	-20	-19	-17	-16	-15	-14	-13	-12	-11	-10	-8	-7	-6	-5	-4	-2	-1	0	1	3	4	5	6	8
72	-22	-21	-20	-19	-18	-17	-16	-15	-13	-12	-11	-10	-9	-8	-6	-5	-4	-3	-2	0	1	2	3	5	6	7
74	-23	-22	-20	-19	-18	-17	-16	-15	-14	-13	-12	-10	-9	-8	-7	-6	-4	-3	-2	-1	1	2	3	4	6	7
76	-23	-22	-21	-20	-19	-18	-16	-15	-14	-13	-12	-11	-10	-8	-7	-6	-5	-4	-2	-1	0	1	3	4	5	7
78	-23	-22	-21	-20	-19	-18	-17	-16	-15	-13	-12	-11	-10	-9	-8	-6	-5	-4	-3	-2	0	1	2	4	5	6
80	-24	-23	-22	-21	-19	-18	-17	-16	-15	-14	-13	-12	-10	-9	-8	-7	-6	-4	-3	-2	-1	1	2	3	5	6

Apparent temperature with no radiational heating and relative humidity fixed at 70%

Formula from *Norms of apparent temperature in Australia*, **Aust. Met. Mag**, Vol 43, 1994, 1-16.

24. Wet Bulb Globe Temperature Approximation

Wet Bulb Globe Temperature (WBGT) from Temperature and Relative Humidity

Relative Humidity (%) \ Temperature (°C)	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
0	15	16	16	17	18	18	19	19	20	20	21	22	22	23	23	24	24	25	25	26	27	27	28	28	29	29	30	31	31	32	32
5	16	16	17	18	18	19	19	20	21	21	22	22	23	24	24	25	26	26	27	27	28	29	29	30	31	31	32	33	33	34	35
10	16	17	17	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27	28	29	30	30	31	32	32	33	34	35	36	36	37
15	17	17	18	19	19	20	21	21	22	23	23	24	25	26	26	27	28	29	29	30	31	32	33	33	34	35	36	37	38	39	
20	17	18	18	19	20	21	21	22	23	24	24	25	26	27	27	28	29	30	31	32	32	33	34	35	36	37	38	39			
25	18	18	19	20	20	21	22	23	24	24	25	26	27	28	28	29	30	31	32	33	34	35	36	37	38	39					
30	18	19	20	20	21	22	23	23	24	25	26	27	28	29	29	30	31	32	33	34	35	36	37	39							
35	18	19	20	21	22	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39								
40	19	20	21	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39									
45	19	20	21	22	23	24	25	26	27	27	28	29	30	32	33	34	35	36	37	38											
50	20	21	22	23	23	24	25	26	27	28	29	30	31	33	34	35	36	37	39												
55	20	21	22	23	24	25	26	27	28	29	30	31	32	34	35	36	37	38													
60	21	22	23	24	25	26	27	28	29	30	31	32	33	35	36	37	38														
65	21	22	23	24	25	26	27	28	29	31	32	33	34	36	37	38															
70	22	23	24	25	26	27	28	29	30	31	33	34	35	36	38	39							WBGT > 40								
75	22	23	24	25	26	27	29	30	31	32	33	35	36	37	39																
80	23	24	25	26	27	28	29	30	32	33	34	36	37	38																	
85	23	24	25	26	28	29	30	31	32	34	35	37	38	39																	
90	24	25	26	27	28	29	31	32	33	35	36	37	39																		
95	24	25	26	27	29	30	31	33	34	35	37	38																			
100	24	26	27	28	29	31	32	33	35	36	38	39																			

Note: This table is compiled from an approximate formula which only depends on temperature and humidity. The formula is valid for full sunshine and a light wind

25. About the approximation to the WBGT used by the Bureau of Meteorology

The approximation used by the Bureau of Meteorology does not take into account variations in the intensity of solar radiation or of wind speed, and assumes a moderately high radiation level in light wind conditions.

Use of this approximation may lead to incorrect estimates of thermal stress, particularly in cloudy and windy conditions. Under these conditions the approximation is likely to lead to an overestimate of the stress. The approximation will also overestimate night-time and early morning conditions when the sun is low or below the horizon.

26. Implications for Archery

As mentioned the Bureau of Meteorology maintains records of Air Temperature and Relative Humidity and wind speeds for a number of areas around Australia, you can use these to estimate the WBGT for your area for a given period. When organising events and looking at possible dates to conduct events this should be taken into account.

Assuming that a WBGT of 28^{o}C or greater is the trigger for suspending/cancelling sporting events, it is an interesting exercise to examine the records of the Bureau of Meteorology.

27. What to Do?

Archers are responsible for their own safety and well being and as such should consider all possible control measures, examples include:

- Always wear a hat
- Wear appropriate light weight clothing.
- Wear shirts with long sleeves
- Always use appropriately rated sun screen
- Consume large amounts of water, avoid soft drinks as they usually encourage dehydration
- Competitors concerned about possible heat risk should review weather forecasts and consider withdrawing from events.

Event organisers should take every possible measure to provide a safe environment by:

- Providing access where possible to cool, easily accessible rest areas
- Providing shade in the waiting Area
- Providing access to water
- Programming events outside of known high extreme weather times of the year
- Reviewing Bureau of Meteorology weather history to avoid excessive hot periods of the year
- Developing a policy on cancelling or rescheduling events if extreme weather conditions occur

It should be stressed it is the responsibly of the archers to ensure they are appropriately supplied with necessary refreshments. The organising committee where possible should provide access to water to the competitors.

28. Monitoring

It is essential to have some form of on-site heat stress measurement tool. The Bureau of Meteorology can provide on-line assessment of WBGT levels for requested areas.

Devices for measuring WBGT are available and can be quite expensive and require regular maintenance. Information on a popular device used by many sports can be found below.

29. Implementation

Clubs should embrace the Archery Victoria Heat Stress Policy and develop their own guidelines. In extreme heat conditions conduct regular air temperature and humidity readings referring to either the tables in this document or the Bureau of Meteorology website or use a WBGT testing device.

Clubs and Organising Committees should develop a policy where competitors are regularly advised the WBGT. They should also consider adopting a WBGT standard at which events are automatically postponed or cancelled.

Organisers should keep the DOS and officials advised of heat stress levels during competition i.e. from minimal to moderate, moderate to high, high to extreme. The DOS should advise the competitors of conditions; this will enable competitors to make their own decision about continuing.

Any group planning an event in possible extreme heat conditions should consider obtaining WBGT testing equipment and using this equipment during the event.

Each club or organising committee should develop an event postponement or cancellation policy.

30. Authority

Club and event organisers should appoint someone to monitor environmental conditions. The DOS and organising committee must have sole authority for continuing, suspending or recommencing activities.

31. Emergency Response

When organising events in possible extreme weather periods ensure that appropriately trained and qualified people are available to respond to heat stress victims. Remember, for potential heat stroke sufferers, immediate treatment is the key to survival.

32. Kestrel 3000 Pocket Weather Meter

The Kestrel 3000 (heavy duty) has been redesigned for even better performance and functionality. A popular meter with fire fighting and outdoors organisations.

Measures

- Current Wind Speed
- Maximum Wind Gust
- Average Wind Speed
- Air, Water & Snow Temperature
- Wind Chill
- Relative Humidity
- Heat Stress Index
- Dewpoint