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The Five Seasons of the Monsoonal Coastal Tropics

In the northern coastal tropics of Queensland, the climate changes from one season to the next. The four temperate seasons are irrelevant. The original inhabitants of these latitudes had five seasons: Early, Middle and Late Wet and Early and Late Dry.

The Early Wet starts any time between October and December. It is the build-up to the Wet. An inland heat trough forms over central Queensland that draws moist tropical air down from the north. The sweat starts to form beads on your skin instead of evaporating into the air. Thunderstorms erupt on the western side of the escarpment and march towards the east coast. At first they don't make it, collapsing over the mountains on the way. Then later when the trough moves closer to the coast, some of the storms burst through and lash the coastal plain. The recently burnt savannah erupts in a flush of green and steam settles over everything. The moist air boils under the burning sun. People go troppo.

The Middle Wet is ruled by the monsoon trough, the delineation of the northern hemisphere circulation and the southern. The monsoon blows in from the north-west, driven by the Indian Ocean. Pulses of increased activity come from the west over the ocean and across the top of Australia, ending in the Coral Sea taking about six weeks between cycles, the Madden Julian Oscillation (MJO). Increased cyclonic activity follows each pulse starting in November or December and lasting until March or April. During these months monsoonal downpours can last for days or even weeks, flooding entire catchments, filling the floodplain, and rejuvenating the ecosystem. Sometimes the rain comes when the monsoon trough drifts overhead at other times it arrives with a cyclone spawned by the monsoon in the Coral Sea and driven onto the coast by a favourable upper atmosphere. Most people will tell you they don't want a cyclone to cross the coast where they are but secretly they crave the experience of the raw power of nature even if it is only so they can play the role of natural disaster victim, get their roof tarped by the SES, and have the news cameras rolling down their street. You see people on the news after a cyclone explaining how the roof just lifted off and blew away. They grin madly, delighted that something exciting has finally happened to break the monotony of life in the twenty-first century. I believe it has a cretinising effect to live in a world where everything is safe all the time. Look at how much stuff gets invented at a time of

war. For virtually everything we have that makes the world what it is today, we can thank Nazi Germany, the USSR, and the UK and USA for being such worthy adversaries. Occupational Health and Safety did not come into the equation. We are never more alive than when we confront death; we are never more dead than when we live in a bubble.

The Late Wet is characterised by the retreat of the monsoon to the north some time around the March equinox. The air remains moist. The sun gradually eases back from maximum power, rain comes more as showers, greenery abounds as plants flower and fruit at the end of the growing season. Ephemeral streams continue to flow, and the temperature remains above 30 C during the day and above 20 C at night. By late April the temperate belt of high pressure has moved north again and the south-easterly trade flow becomes established along the Queensland coast. We start to get sub-thirty maxima, sub-twenty minima, drier air, and a gentle breeze. One of the worst things about monsoonal heat is the complete absence of breeze. Some time during May clues signifying the end of the Wet. Red Tailed Black Cockatoos will depart the coast where they have been feasting on Sea Almonds (Terminalia catappa) to return inland for whatever it is they eat there. Dragonflies will become prolific. The Black Wattle (Acacia crassicarpa) will come into bloom. The dreaded Box Jellyfish and its smaller cousin, the Irukandji leave the coastal waters for the cooler months making it safe (relatively, there are still sharks, stingrays, stone fish, sea snakes, etc.) to swim again. There are undoubtedly many other features of the natural world the indigenous people would have observed, including the movement of their constellations which, interestingly, are formed by the negative space between groups of stars rather than the join-the-dots approach.

The Early Dry sets in by the beginning of June. Mid-teens at night, mid to high-twenties during the day, mostly clear skies, and low relative humidity: climatic perfection! Even if it has been a little chilly around dawn, as soon as the sun ascends you feel warm again. The sea water is still carrying some residual heat so if the air is coming from the south, cool and dry, the water can be warmer than the air. From time to time an upper trough sweeps across from the west drawing a deck of high cloud between sun and earth. The air flow swings more northerly on the eastern side of the trough and the cloud acts like a blanket keeping the night time temperature around 20 C. Then as the trough moves out to sea, cold dry southerlies clear the sky of cloud pushing temperate air into the tropics, giving an impression of winter. At this time of year we are inundated by southern tourists escaping the freezing cold wind and rain of the real winter. But it is not winter here, it is the Early Dry. The grasses have flowered and died along with the annual herbs and we can expect very little rain before the next Wet. The colour of the understory has changed from green to brown all across the tropical savannah and as the dry conditions continue, the returning warmth around the equinox in September heralds the next change.

The Late Dry is the season of fire and of wind. Large, powerful high pressure systems over the Tasman Sea blow gale force winds up the Queensland coast. In the tropics these are known as the Mango Winds, performing the important function of thinning the developing mango crop. The mango blossom is a terminal panicle, a branching inflorescence holding many more

flowers than the tree could possibly set as fruit. As well as blowing off some of the immature fruit at about pea size, the wind clears the panicle of spent flowers that didn't get fertilised. If the wind doesn't come at the right time or doesn't blow hard enough or if it rains, this detritus can cause the fungal pathogen, Anthracnose to proliferate and reduce the size of the crop. By the end of September, our driest month, as we pass the equinox the sun is getting higher and warmer again. Maxima creep above 30 C and minima over 20 C. The inland heat trough forms, the atmosphere becomes unstable, thunderstorms start billowing into the sky and shooting sparks into the combustible earth. It has only taken us (the European invaders of this ancient land) about two hundred years to get over our sense of superiority to the Aboriginal people and realise we have a lot to learn. Like you have to burn the bush, a bit here and a bit there during the cooler months to maintain the land at its maximum productive capacity and to avoid destructive wild fires. If a fire takes hold during the hot months it will spread more quickly, cover a larger area and burn at a higher temperature doing far more damage, killing more wildlife, and even changing the species mix of the ecosystem. Such a reduction in biodiversity makes the system less stable, less resilient and more likely to degenerate into a state of desertification. I propose the abandonment of the four temperate seasons in northern Australia linked to arbitrary calendar dates and the adoption of the five seasons of the tropical savannah as defined by climatic changes and their expression in the natural world: a small gesture of reconciliation and respect for the Aboriginal people who lived here in harmony with nature for tens of thousands of years.