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17th April 2020

Royal Commission on Fires, Western Australia

With some 40 years experience on fire and wetlands in Western Australia, I provide these very brief points to you for careful consideration in the upcoming enquiry into environmental burn policy and procedures. The content relates to Western Australia and the experience our group have obtained working in wetlands for the last 40 years.

Appended is a scientific article about the impact of fire on wetland sediments, penned by two of our members.

We do not wish to mimic the disastrous loss of plant and animal life which took place in the eastern states earlier this year.

Yours Sincerely
Dr C Semeniuk
Wetlands Research Association

Summary of points.

Unintended consequences of indiscriminate burning of wetland ecosystems

1. On the Swan Coastal Plain fire (controlled burns by government agencies, indiscriminate fires, and arson) have played a major role in affecting wetlands.
2. Fire has led to an increase in the weed cover in wetlands, and hence loss of biodiversity. The weeds are fast growing and robust and compete successfully with native plants trying to regenerate through root stock or through seed production. Once the weeds have become established, they provide inflammable fuel for the future in contrast to native plants which burn more slowly.
3. In the southwest of Western Australia because wetlands are a small component of natural ecosystems, it is unlikely that their inclusion in any programmed burning will increase protection for the surrounding areas at greater risk, nor that they will provide any sort of a buffer to prevent fire spreading
4. Many wetlands have patchy or peripheral vegetation, leaving the larger part of the wetland sediments and ground dwelling fauna (frogs, gilgai) to take the brunt of the burn
5. Fire burns deeply and long in wetland sediments, prolonging and increasing the risk of fire re-igniting in the future, and destroying soil bacteria and micro and invertebrate fauna which are an important part of wetland ecosystems and crucial to the web chain of migratory or endemic avifauna
6. Peat wetlands accumulate at 1 cm/100 years. To replace 20-50 cm of peat lost to fire is well beyond any dedicated management time line. It is simply a loss.

7. Many declared rare flora and priority flora colonise wetlands (*Reedia spathacea*, WA orchids, aquatic plants). These vulnerable populations eventually will be wiped out by fire.
8. Groundwater dependent plants which colonise seasonal and intermittent wetlands are not resilient in fires, *e.g.*, *Melaleuca raphiophylla*.
9. In terms of human health, fires in wetland in their smoke release toxins that have effects on personnel that have respiratory problems, and release carcinogenic particles by converting amorphous organic silica into needle-like crystalline silica.

If you need further elaboration on any of these issues, please contact me

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Yours sincerely

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Dr C A Semeniuk
17th April 2020









































































































