Biography

Ayesha is a conservation ecologist who focuses on improving monitoring and evaluation of threatened communities and ecosystems. She works with conservation agencies including the Wildlife Conservation Society and

SYMPOSIUM: Assessing risks to ecosystems - research and applications

Thursday, November 30, 2017

11:00 AM - 1:00 PM

Bush Heritage Australia to ensure conservation management is informed by good ecology.

EcoTAS abstract

Changed fire regimes lead to declines of fire-regime-adapted communities, biotic homogenisation, and ecosystem degradation. Accurately measuring ecosystem degradation in disturbed landscapes is challenging because an ecosystem could be in multiple states that might worsen or improve depending on disturbances. We demonstrate two methods of assessing ecosystem degradation by measuring divergence from benchmark conditions resulting from fire disturbance. Our case study is the south-western Australian proteaceous mallee-heathland, which does not warrant threatened status under IUCN Red List criterion A due to <50% loss of extent since 1750. Our first assessment method uses matrix population models to predict population growth of ecosystem-provisioning species (obligate-seeding Banksia) under 100 years of alternative fire regimes and growing conditions. Under current regimes and poor rainfall, 85% of Banksias are predicted to be lost from poorly-connected patches (20% of remnant vegetation), and 70% could be lost from highly-connected patches that make up the remaining 80% of vegetation. The combination of >80% extent with >50% severity of degradation (loss of species with key roles for ecosystem funtion) suggests classification as Endangered (criterion D2). Our second method quantifies the summed shortfall of vegetation age-class frequencies relative to a reference age-class distribution of time-since-last-disturbance, and indicates that 37-61% of remaining extent diverges from ideal baseline conditions. This suggests classification as Vulnerable (criterion D1), although lack of historical data on fire intensity makes it difficult to accurately assess degradation severity. Improved

Brokenback Room

Oral presentation

Tulloch A [1,2] , McDonald J [1] , Sanders A [3] , Chadès I [4] , Gosper C [5] , Possingham H [6]

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[2] Desert Ecology Research Group, University of Sydney, Camperdown New South Wales, Australia

[3] Bush Heritage Australia, Albany Western Australia, 6330

[4] CSIRO, Ecoscience Precinct, Dutton Park Queensland, Australia

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[6] The Nature Conservancy, Brisbane Queensland, Australia

Accurately measuring degradation due to change fire regimes to inform IUCN Red-Listing and ecosystem recovery

assessment of ecosystem degradation resulting from disturbances is crucial to accurately evaluate change, assess ecosystem risks, and direct recovery actions.

EcoTAS 2017

The joint conference of the Ecological Society of Australia and the New Zealand Ecological Society

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EcoTAS17 Presenters

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Kiri (Reihana) Spraggs

EcoTAS abstract

The widespread degradation of water quality and quantity and its state of mauri, is a significant issue for Māori. This issue is represented by widespread degradation of

Open session (1)

Monday, November 27, 2017

3:45 PM - 5:45 PM

Sugarloaf Room

Oral presentation