

## **500 plastome project: New tools for restoring and conserving the Pilbara flora**

Paul G Nevill<sup>1,2,3</sup>, Xiao Zhong<sup>4</sup>, Anna Williams<sup>1,2,4</sup>, Margaret Byrne<sup>5</sup>, Kevin Thiele<sup>2,6</sup>, Stephen van Leeuwen<sup>5</sup>, Laura Boykin<sup>4</sup>, Ian Small<sup>4</sup>

<sup>1</sup>ARC Centre for Mine Restoration, Department of Environment and Agriculture, Curtin University

<sup>2</sup>School of Plant Biology, The University of Western Australia

<sup>3</sup>Kings Park and Botanic Garden

<sup>4</sup>ARC Centre of Excellence in Plant Energy Biology, The University of Western Australia

<sup>5</sup>Science and Conservation Division, Department of Parks and Wildlife

<sup>6</sup>Western Australian Herbarium, Department of Parks and Wildlife

The Pilbara bioregion of Western Australia has a relatively rich and diverse flora for an arid region, with over 1200 plant taxa and with new species discovered frequently. Effective identification of species and understanding of their relationships are critical for conserving this diverse arid zone flora in the context of the challenges presented by changing land management practices, intensification in land use, and resource development. I will give an overview of the need for, and development of high throughput, low coverage shotgun sequencing of whole chloroplast genomes and nuclear ribosomal sequences for over 500 plant taxa. These will provide reference sequences for identification tools, and will be used for phylogenetic studies, comparative analyses of plastid genome evolution, and analyses of biodiversity patterns.