

Terrestrial invertebrates **capability statement**



Jarrad Clark Director;
Manager Terrestrial Fauna

Phoenix prides itself as an industry leader in targeted invertebrate, including short-range endemic (SRE) invertebrate, surveys based on unmatched field experience in Western Australia and stringent reporting standards based on scientific publication principles.

ABOUT TERRESTRIAL INVERTEBRATE SURVEYS

Invertebrates constitute approximately 99% of the faunal biodiversity on earth and occur in virtually every environment. Insects account for the vast majority of these in terrestrial habitats, but other groups such as spiders (and their relatives including scorpions and pseudoscorpions), millipedes, centipedes, crustaceans and land snails may be present in vast numbers and fulfil irreplaceable ecological roles.

Targeted invertebrate surveys for short-range endemic invertebrates (SREs) and those listed as protected (Wildlife Conservation Act 1950) or Priority (Department of Environment and Conservation) are routinely undertaken for environmental impact assessment (EIA) in WA. These species are of inherent conservation value due to their higher risk of extinction from development.

Terrestrial invertebrates play an integral role in natural systems and ecosystem health, e.g. through their role as integral part of food webs and contribution to soil health. They also provide irreplaceable ecological services as pollinators or seed dispersers. Many invertebrates have been proposed as bio-indicators to measure ecosystem health in response to various threatening processes, e.g. accumulation of pollutants or explosions of invasive species.

Broader invertebrate assemblage surveys may sometimes be required as part of EIAs or following project approval to monitor the health of receiving environments / sensitive ecosystems, such as salt lakes and their associated



Phoenix Environmental Sciences offers a broad range of complementary biological and environmental management services. Our team strikes the right balance of scientific credibility, practical application and business sense.



riparian habitats. More recently, surveys for invertebrates are being incorporated into mine site rehabilitation monitoring.

INDUSTRY ISSUES

The design of terrestrial invertebrate surveys is complex and important factors such as habitat preferences or life history characteristics of target species need to be considered. For example, most WA invertebrates have well-defined life cycles that are synchronised with the seasons and this needs to be considered in survey design. Invertebrate surveys are often designed with an inappropriate 'one-size-fits-all' approach.

OUR SOLUTION

Our intimate knowledge of invertebrate biology allows for cost-effective survey design that aims for optimal results based on a well-defined, hypothesis driven survey strategy.

Our innovative survey designs provide results that support decision making in the industry and appropriate environmental management outcomes. We have developed award-winning research projects on terrestrial invertebrates to the benefit of our clients. We have considerable experience in the design and implementation of targeted surveys and long-term monitoring programs to support decision making and environmental management objectives.

We offer fast, reliable and credible taxonomy and desktop interpretation due to our unique expertise in terrestrial invertebrates. Phoenix expert taxonomists are at the forefront

of scientific research and our studies are respected and well-received by regulatory bodies.

The team offers:

- baseline invertebrate surveys and monitoring
 - › baseline, post-approval and rehabilitation surveys
 - › biodiversity surveys
 - › long-term monitoring and ecosystem health studies
 - › impact vs non-impact studies
- targeted invertebrate surveys
 - › SRE invertebrates, including baseline surveys for EIA and monitoring to meet approval conditions
 - › conservation significant (*Wildlife Conservation Act 1950*) and DEC Priority species
 - › monitoring and research programs
 - › pre-clearance surveys for conservation significant species
- invertebrate taxonomic services including genomics analyses and publication-quality microscopic photography
- management plans
- development of offset packages

CONTACT

Jarrad Clark
T: 08 6323 5412
jarrad.clark@phoenixenv.com.au
www.phoenixenv.com.au



PHOENIX
ENVIRONMENTAL SCIENCES

1/511 Wanneroo Road, Balcatta WA 6021
T: (08) 9345 1608
E: admin@phoenixenv.com.au
ABN: 60 131 288 938
www.phoenixenv.com.au