

## Summary

The Green Star Change in Ecology Calculator measures the ecological value of the site chosen for development before and after development, in order to assess environmental impact.

**Developers:** Green Building Council of Australia (GBCA)

Applicable sectors							Themes		
All Infrastructure	Buildings	Roads	Water	Energy	Transport	Construction	Materials	Ecology	Wastewater
							Potable Water	Carbon/GHG	Other
<b>Countries</b>	Australia					<b>Access</b>	Free to download		
<b>Compatibility with other tools</b>	This calculator is part of the excel-based Green Star rating tool and is used in conjunction with the <i>Green Star Technical Manual</i> for the relevant building typology.					<b>Guidance for users</b>	The calculator is accompanied by the <i>Change of Ecological Value Calculator Guide</i> which offers guidelines in its use, presents the calculator's inbuilt data and explains the methodology the calculation is based on.		
<b>Inputs &amp; outputs</b>	<p>The user is requested to specify whether or not the development site contains any rare, threatened or vulnerable flora or fauna, and indicate in which bio-region in Australia it is located (from a dropdown menu).</p> <p>The user then needs only indicate the different land types before and after development, and their size (in m<sup>2</sup>).</p> <p>The calculator outputs the Ecological Diversity Index before and after development, the difference between them, and the Green Star points achieved as a result.</p>					<b>Methodology</b>	<p>The calculator compares the relative ecological value of land at the time of site purchase to that which exists after development. Points are achieved where the ecological value of the site is either maintained or increased.</p> <p>This is calculated using the following information: whether or not the site contains endangered, threatened or vulnerable species; the bioregion in which the site is located; the area of each different ecological land type on the site before development, and after development.</p> <p>Once the user specifies an area for an ecological land type this is multiplied by the Ecological Weighting of that land type (a measure of its ecological importance) to give an Ecological Score. In the case of native land types, wetlands and waterways the Ecological Score is multiplied by the Bioregion Reservation Factor.</p> <p>The result for all ecological land types before development are added, and the same is done for after development. These are each divided by the total land area to produce the Ecological Diversity Index for before, and after development, enabling their comparison.</p>		
<b>Database library</b>	<p>The calculator contains in-built Ecological Weightings for the different ecological land types in Australia developed by qualified ecologists (these are comparative only).</p> <p>It also contains inbuilt Bioregion Reservation Importance Factors for native land types, wetlands and waterways.</p>					<b>Data intensity &amp; flexibility</b>	The data flexibility and intensity are both low as the user is predominantly given predefined options to choose from.		

Note: "Free to download" does not necessarily imply that it is free for commercial use.