

# Green Space Efficiency And Biodiversity

V1.5

Dense wild plants are often considered weeds by managers of urban spaces. The attitude is based on unscientific myths that wild plants are negative factors for visual amenity, public health and fire prevention. A close examination will find the opposite.

## Biodiversity Conservation

Many nations such as Australia are members of UN Convention on Biological Diversity. The Department of agriculture water and the environment also has directions on supporting biodiversity conservation on the private land:

“The Australian Government recognises that conservation of biodiversity on private land is an important way to protect Australia's biodiversity.

State and territory governments and local governments also provide conservation incentives to private land holders.

Conservation incentives encourage or motivate people to participate in conservation activities. Incentives can be financial or non-financial in nature, and are typically offered by governments as part of an environmental program. Some



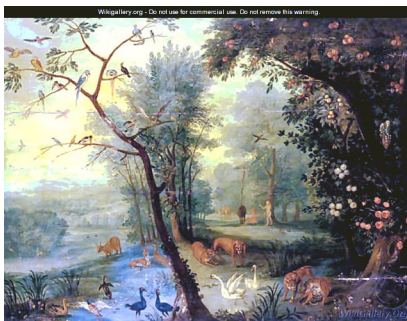
incentives are linked to: management plans, placing covenants on land, conservation agreements, or to other permanent protection tools such as formal reservation.”

Read the full article below:

<https://www.environment.gov.au/biodiversity/conservation>

## Visual Amenity

There is no reason to believe simple geometric pattern of man made objects such as concrete, blocks, are visually more appealing than the complex beauty of natural ecosystem and biodiversity.



Throughout the art history, complexity has been appreciated. Professor and Dean of the School of Art and Design Nottingham Trent University, supervised a PhD study on why artworks tend to be complex and how visual complexity relates to aesthetic value in 2006

<https://aestheticcomplexity.wordpress.com/research/phd/>

Some people cannot appreciate dense wild plants due to the lack of knowledge of plants. House owners can add tall fence to create visual simplicity if it is required by the local setting.

## Public Health

Wild plants can improve the public health in the surrounding areas. Most wild plants can be used as herbal remedies or are edible (see links below). They also emit healing essential oils into the air constantly: Many are known for antiviral, immune support properties.

<https://twitter.com/PermacultureWeb/status/847246656596606980>  
<https://cairnsdiet.goodeasy.info/>

There are also many plant foraging groups on social media. For example, Facebook group "Edible Weeds, Wild Plants & Foraging in Australia" has more than 30 thousand members.

## **Fire Prevention**

Ground covering plants reduces the risk of fire by lowering ground temperature and retain moistness. This is well-established in the scientific community, especially in the context of global warming:

<https://www.epa.gov/heat-islands/using-trees-and-vegetation-reduce-heat-islands>

<https://mobile.abc.net.au/news/2020-02-13/climate-warning-over-heat-island-effect-as-city-greenery-decline/11923890>

Google "green coverage reduce heat" you will find many more studies deliver similar messages.

Below is an article from American Society of Agronomy ("a group of professional experts who help feed and sustain the world every day"): Title and quotation of the article follow: "Easing the soil's temperature - Cover crops shield soil from extreme temps "... "Research has shown that both cover crops and perennial biofuel crops can relieve soil compaction. Cover crops are generally planted between cash crops such as corn and soybeans to protect the bare soil. They shade the soil and help reduce soil water evaporation. Their roots also add organic matter to the soil and prevent soil erosion. This also keeps the soil spongy, helping it retain water."

The wild plants can act as cover crops for 'main plants' in the urban green space. The full article can be accessed at <https://www.sciencedaily.com/releases/2017/11/171108092434.htm>

## Other Benefits

1) Carbon fixation. Virtually all green plants can reduce emission and climate change by photosynthesis. 'Weeds'/grass are mini trees. Many of them can have larger effect than single trees collectively. The cost/emission of running/starting these carbon sucking machines is zero. More urban green space and higher vegetation density means more carbon fixation. In general, the volume is proportional to amount of carbon trapped. Eg., doubling the green space vertically (height of plants) means doubling the carbon fixation. Wild plants tend to fill any available space naturally.

2) Shelters for wild birds/animals. Most wild animals are not dangerous to humans, if you compare to the total number of death from car accidents, suicide etc. annually.

## Conclusion

COVID-19 has demonstrated the weakness of the urban/industrial ecosystem in the changing climate. Large cities, such as New York, London, Sydney, Melbourne are heavily impacted. A living space of higher green-efficiency benefits all members of the societies.

