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ENVIRONMENTAL LANDSCAPING: WORKING WITH NATURE, NOT AGAINST IT

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Introduction

Environmental landscaping is a method of creating outdoor areas that satisfy human demands for comfort, attractiveness, and pleasure while also honouring ecological processes. Large lawns, exotic plants, high fertiliser use, and frequent pesticide applications were typical practices in the past, when landscapes were frequently created with an emphasis only on ornamental value. Despite their aesthetic appeal, these systems frequently use enormous amounts of water, need a lot of upkeep, and disturb nearby ecosystems.

Environmental landscaping, on the other hand, places a strong emphasis on resource efficiency, biodiversity preservation, soil health, and sustainability. In addition to reducing reliance on chemical inputs, it conserves water, encourages the use of native and climate-adapted plants, and establishes habitats for beneficial creatures.

This strategy is particularly crucial in areas where biodiversity loss, soil degradation, and water scarcity are occurring. We build durable, economical, and ecologically conscious outdoor spaces by coordinating landscaping techniques with natural systems.

Beauty is not sacrificed in the name of environmentally friendly landscaping. Rather, it reinterprets beauty to encompass balanced ecosystems, healthy soils, flourishing pollinators, and effective water utilisation. Such landscapes, when well designed, offer shade, lower urban heat, stop erosion, filter rainfall, and improve mental health. They develop into living systems that sustain both humans and the natural world.

Supporting Wildlife and Biodiversity

Creating wildlife-friendly habitats is one of the main tenets of environmental landscaping. With proper design, gardens can serve as miniature ecosystems. Birds, butterflies, bees, and other pollinators can find food and shelter when native flowering and fruiting plants are planted. Native plants are more resilient and less reliant on artificial inputs since they are naturally adapted to the soil and climate of their area.

Butterflies rely on host plants to lay their eggs and on certain nectar-producing plants to feed. In a similar vein, insects provide a major source of protein for birds, particularly during mating seasons. Overuse of chemical pesticides lowers insect populations, which has an indirect impact on ecological balance and avian diversity. Thus, in wildlife-friendly

environments, reducing the usage of pesticides is essential.

The value of habitat is increased by providing water sources, such as bird baths. Numerous species might be drawn to even little water features. The preservation of safe dead trees, or snags, is a major factor in biodiversity. Insect-eating birds use these trees as feeding grounds, perches, and nesting chambers.

Promoting animals in gardens helps with pollination, seed dissemination, and natural pest control. Biodiversity-rich landscapes are more self-regulating and stable, requiring less ongoing human intervention.

Fig. 1 Native flowering garden with butterflies, bees and birds around a bird bath

Importance of Plant Diversity

Vulnerability to pests, diseases, and climate stress is increased by monoculture planting, which covers enormous regions with a single species. Diverse plant choices, such as trees, shrubs, grasses, climbers, perennials, and groundcovers, are encouraged by environmental landscaping.

Layered vegetation is produced by diverse planting; groundcovers shield the soil's surface, shrubs fill the middle layer, and tall trees form the canopy. This tiered configuration improves habitat availability and resembles natural ecosystems. By lowering wind speed, regulating temperature, and preserving soil moisture, it also enhances microclimatic conditions.

In general, slow-growing plants are better than fast-growing ones. Fast-growing plants can become invasive, produce more green waste, and frequently need pruning. Slow-growing plants are good for sustainable landscapes since they require less upkeep to preserve their shape and structure.

Additionally, diversity improves aesthetic attractiveness. Year-round interest is ensured by varying plant forms, leaf colours, textures, and flowering seasons. A well-planned, varied landscape is both visually beautiful and ecologically useful.

Sustainable Lawn Alternatives and Management

Although they are frequently resource-intensive, lawns are employed extensively in both public and domestic landscapes. They need regular fertilisation, watering, mowing, and insect control. Using groundcovers or planting beds in place of typical lawns can drastically lower maintenance needs in places where grass suffers from poor soil, shade, or insufficient rainfall.

Common lawn grasses include:

- ***Paspalum notatum*** **(Bahia grass)** - Known for low maintenance needs but not tolerant to saline conditions and vulnerable to mole crickets.

- ***Stenotaphrum secundatum*** **(St. Augustine grass)** - Salt tolerant yet requires more water and fertilizers and is prone to pest problems.
- ***Cynodon dactylon*** **(Bermuda grass)** - Popular for sports fields and golf courses; demands intensive maintenance and frequent mowing.

Applying chelated iron or iron sulphate can address nutritional inadequacies without overusing full fertilisers if lawns continue to look yellow even after sufficient rainfall. In addition to wasting resources, excessive fertilisation can contaminate groundwater.

Water consumption is decreased and biodiversity is increased when portions of lawn are replaced with mulched areas, natural grasses, or blooming beds.

Efficient Water Conservation Practices

An essential part of environmental landscaping is water management. Instead of flowing away as surface runoff, rainwater should be encouraged to penetrate the soil. Methods like mulched basins, rain gardens, and contour planting enhance water retention and lessen erosion. Hydro zoning is a technique that increases irrigation efficiency by grouping plants based on comparable water and sunlight requirements. Once established, drought-tolerant plants drastically lower their water needs. By delivering water straight to plant roots, drip irrigation systems reduce evaporation and waste. Overwatering is avoided by automated sprinkler systems equipped with moisture sensors. Plants can more efficiently absorb moisture when watered early in the morning, which also lowers evaporation losses. Additionally, mulching protects against temperature extremes and preserves soil moisture.

Enhancing Soil Health with Compost and Mulch

Strong root development and increased plant stress tolerance are supported by healthy soil. Soil is naturally enhanced by compost made from partially decomposed garden refuse and kitchen leftovers. It strengthens the structure, boosts aeration, increases the ability to hold water, and encourages the growth of beneficial microbes like bacteria and earthworms.

Compost offers a gradual and consistent delivery of nutrients, in contrast to commercial fertilisers that release nutrients rapidly. This slow release guarantees effective plant absorption and minimises nutrient leakage. Additionally, composting lessens household trash, which promotes environmental sustainability.

Slow-release, water-insoluble nitrogen fertilisers can be used sparingly in situations where compost is not available. Compared to quick-release fertilisers, they are safer for the environment and require fewer treatments, albeit being slightly more expensive. To safeguard beneficial soil organisms, fertilisers that contain insecticides or weed killers should be avoided.

The soil surface is protected by mulching with organic materials like twigs, dry leaves, and grass clippings. It inhibits weed growth, lowers evaporation, stabilises soil temperature, and stops soil erosion during periods of intense precipitation.

Integrated Pest Management (IPM)

Integrated pest management prioritises ecological balance and prevention above frequent chemical spraying. Air circulation is improved and disease incidence is decreased by choosing pest-resistant plant

species and keeping appropriate spacing. Because lush, soft growth attracts insects, overwatering and excessive fertilisation should be avoided.

Keeping an eye on insect numbers aids in early problem detection. In tiny gardens, mechanical techniques like hand-picking insects and plucking diseased leaves work well. Biological management is improved by promoting natural predators including birds, spiders, and ladybird beetles.

Safer substitutes like horticultural oils and insecticidal soaps should be used sparingly when chemical control is required. Because they kill both helpful insects and dangerous pests, broad-spectrum pesticides should be avoided.

Ponds and Water scaping for Ecological Balance

Ponds and other water features add ecological value and aesthetic appeal. Ponds preserve aquatic biodiversity, gather rainfall, and lessen runoff. They offer homes for beneficial insects, birds, dragonflies, and frogs. Recreational uses for well-designed ponds include relaxing areas and the keeping of decorative fish.

Water scaping elements create a cooling effect and enhance microclimatic conditions around buildings. The presence of water increases humidity slightly and reduces surrounding temperatures, making outdoor spaces more comfortable.

Fig 2. Eco-friendly garden pond with aquatic plants and wildlife

Conclusion

Environmental landscaping is an ethical and forward-thinking approach to garden design. By conserving water, promoting biodiversity, improving soil health, and reducing chemical inputs, landscapes can function as sustainable ecosystems. This method reduces maintenance costs while enhancing environmental quality. Long-term sustainability, ecological balance, and climate resilience are all enhanced when individuals and communities embrace these ideals.

If we plan with nature instead of against it, our landscapes will remain beautiful, productive and life-supporting for years to come.

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