

| | <i>Natives/Florida-Friendly Plants</i> | <i>Living turf</i> | <i>Synthetic turf</i> |
|---------------------------|---|--|---|
| Durability | Many plants are wind and salt resistance and help stabilize soil. Plants not selected for microclimate have shorter lifespans and some groundcovers do not hold up to foot traffic or 'playability.' | Performance turf is durable but requires significant resources for upkeep of 'playability.' | Extremely durable for high intensity performance activities (sports, foot traffic). |
| Shade Tolerance | Many species available for full or part shade. | Requires full or part sun. Can be difficult to maintain or grow in shaded environments. | Performs best in full shade as shade keeps turf cool. |
| Maintenance | Pruning, mulching, weeding, pest management. | Mowing and blowing (requires fuel); fertilizing, pesticides, irrigation system repair. | Requires sanitation upkeep, cleaning chemicals. |
| Toxicity | Some nonnatives commonly planted can be noxious or poisonous to humans or pets. Natives can attract bees and some have thorns. | Personal safety gear recommended when applying some concentrated fertilizers or pesticides; avoid running mower blades. | <p>Bodily fluids (spittle, blood, sweat, vomit, and urine) and or bird or animal droppings get caught in synthetics. Pesticides and cleansing products may be routinely applied to the surface to combat this. Turf often contains antimicrobial components but any silver-based antimicrobials (silver ions) are very toxic in the aquatic environment, with potential to bioaccumulate.</p> <p>“Crumb rubber” used as infill material in turf has been found to contain toxic materials such as:</p> <ul style="list-style-type: none"> • Toxic metals including zinc, lead, arsenic, cadmium, and chromium which have many harmful effects on humans and the environment. • Carcinogens including polycyclic aromatic hydrocarbons (PAHs). • Latex and other rubbers which can cause allergic reactions. • Phthalates which have adverse effects on the reproductive organs, lungs, kidneys and liver. |
| Water | All plants require water. Some are more drought-tolerant and only need what natural rainfall provides; others require ongoing irrigation. When newly installed, plants require supplemental water. Natives and Florida Friendly plants can filter pollutants and improve water quality. | Most turf species require supplemental irrigation in this climate zone (bahia is exception). Some estimates say that 50% of a typical residential water bill is to irrigate plants/lawn. Additionally, pesticide/fertilizer inputs cause runoff and leaching concerns. | <p>Does not require water to grow, but water is often still applied for cleaning and to keep them cool.</p> <p>Must be properly engineered with sub-grade drainage layers to mitigate stormwater runoff concerns.</p> <p>Higher risk of leaching of rubber contaminants. Runoff from artificial turf may contain pollutants like heavy metals and chemicals that can reach surface water or groundwater.</p> |
| Biodiversity | Attracts pollinators and habitat for wildlife. Remediates soil, supports healthy microbes and insects. Avoid monocultures that spread plant diseases and pests. | All turf are monocultures which increase risk of spreading plant diseases and pests. Limited impact on soils and don't readily filter pollutants. | <p>Does not Increase biodiversity of plant, animal and insect populations; Does not Provide habitat for local fauna;</p> <p>Does not Foster healthy soils (healthy soils increase moisture holding capacity, support healthy microbes and insects, filter pollutants)</p> |
| End of Life | Decompose in place or turned into compost or biofuels. | Decompose in place or turned into compost or biofuels. | Often landfilled or incinerated given difficulties. Very difficult to recycle given difficulties separating components. Some components can be repurposed. Some synthetics are being billed as 'biodegradable' but half lives for decomposing take generations. |
| Climate Impact | Significant carbon sequestration and an overall net-positive ecological footprint as published by many life-cycle assessment studies. | Limited carbon sequestration but still negative ecological footprint when considering fuel requirements for maintenance during life-cycle and potential runoff contamination. | Petrochemical compounds in artificial turf. Does not sequester carbon or produce oxygen like living plant material can. See appendix for full report of carbon sequestration and greenhouse gas emissions study provided by WA Toxics Coalition |
| Heat Island Impact | High Solar Reflectance Index and reduces Heat Island impact. | High Solar Reflectance Index and reduces Heat Island impact. | Unsafe for users to be exposed on the surface at high temperatures. Where natural grass had surface temperature at 93.5 degrees (F) artificial grass had a temperature of 180 degrees (F). Extremely low Solar Reflectance Index. Absorbs heat contributing to heat island affect unless installed under shade. |