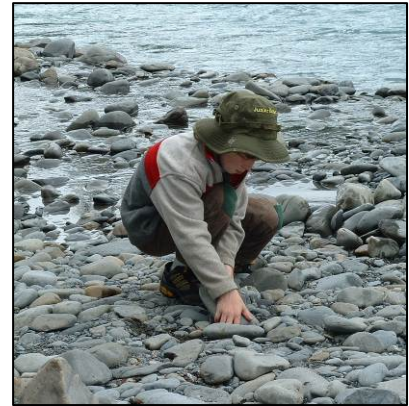


# Nature Play Area Guidelines

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Natural Resources Department

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*“If you’ve ever climbed trees, rolled down hills, scrambled up rocks, made mud pies, dammed up water, hidden in grass, dug in sand, played in dirt, jumped in leaves, or had fun outside in other, similar ways, you’ve experienced natural play.” (Ron King, Natural Playgrounds Company)*

<sup>1</sup> Photos above taken by THPRD staff

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# EXECUTIVE SUMMARY

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This document is intended for Tualatin Hills Park and Recreation District staff as well as contractors hired to design and implement nature play areas. Nature play areas are defined as **designated areas within existing parks in which children have the opportunity to engage in creative, unstructured play with natural elements in a natural setting.**

The goals of nature play areas are to:

- Provide children of all ages, abilities, and socio-economic backgrounds with safe, accessible spaces in which they can interact freely with the natural world.
- Allow these spaces to be as inherently natural a setting as possible, and, when existing spaces aren't available, to design and maintain spaces with nature as the guiding inspiration.
- Appreciate the potential for play inherent within children, and to provide a setting that encourages the use of creativity and imagination rather than, or in addition to, one which allows only for prescriptive physical activities.
- Recognize the value of these spaces as means for environmental education on various levels, including spontaneous and formal adult teaching, as well as that provided by hands-on, unstructured play.
- Make areas attractive as community features.

Nature play areas will take two forms in the District: *off-trail play areas* and *natural playscapes*.

**Off-trail play areas** will involve opening designated sections of existing natural area parks for unstructured free-play, where kids can discover and participate with nature on their own terms. These areas should have characteristics that will allow for an interactive experience with native habitat, including a diversity of plant size and species, fair level of ecological health, and variation in terrain. The needs of successful play areas should be balanced with natural resources concerns and general habitat health.

**Natural playscapes** involve the design of nature-inspired play areas, incorporating natural elements (plants, water, topography, logs, boulders, etc.) and built play structures to provide for a sensory experience of nature and a variety of types of play activities. As a hybrid of nature and traditional play areas, these playscapes will adhere as much as possible to existing applicable safety guidelines.

Due to the newness of this type of play area, a high level of outreach and community involvement are recommended in order to ensure their successful use, not only after they are in place, but in the design and implementation stages as well.

# NATURE PLAY

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## Background

The nature play concept has evolved nationwide as a response to the realization that an inordinate number of children today are lacking a fundamental ingredient in healthy and normal development. Children *need* contact with nature: unstructured, independent interaction that allows them firsthand experience, unmitigated by parents, teachers, or other adult authorities telling them what to do or what ‘nature’ is. This is something that children (and many adults) intuitively know, and which is now being realized on a societal and cultural level. Dozens of studies undertaken in response to the trends that Richard Louv noted in his book *Last Child in the Woods*, show that contact with nature should not be considered a luxury. These studies have revealed that engaging in play in natural setting has the following benefits<sup>2</sup>:

- improves mental development, showing increased concentration, self-discipline, reasoning, and observation skills, and decreased symptoms of ADD/ADHD and behavioral disorders
- increases activity levels, which reduces the likelihood of obesity and Type II diabetes and improves development of motor skills
- strengthens immune systems
- increases ability to cope with stress
- increases sense of confidence, independence, and wonder, characteristics that allow children to become highly functioning, healthy adults and lifelong learners
- fosters an affinity and love of nature that translates to an active environmental ethic later on in life



Unfortunately, most children, especially those who live in suburban areas<sup>3</sup>, do not get to experience this essential interaction with nature. The reasons for this absence include<sup>4</sup>:

- Lack of access to undeveloped, wild places due to increased urbanization and development
- Decrease in amount of free, unstructured time not taken up by school, homework, or organized activities
- Increased use of electronic mediums of entertainment: TV, video games, computers, etc.
- Sensationalism of the media, leading to the perception of danger in the world beyond one’s doorstep

Even when children are able to overcome these obstacles and make it to the local park, the areas where they play typically consist of prefabricated metal or plastic structures in a sea of woodchips. In order to receive the benefits of playing in nature, children must be given a place where it is readily available and efforts must be undertaken to make such places accessible and attractive to kids and parents alike. Tualatin Hills Park and Recreation District, as a purveyor of recreational open space in a suburban area, has the potential to play a key role in this movement by providing such places. This document contains guidelines for the creation of successful nature play areas in the District, which includes methods for siting, design, and public outreach.

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<sup>2</sup> Findings based on various studies; see Keeler, *Natural Playscapes*, and Finch, “A Parent’s Guide to Nature Play” for more findings and specific study citations.

<sup>3</sup> State of Oregon, *Statewide Comprehensive Outdoor Recreation Plan*: [http://egov.oregon.gov/OPRD/PLANS/scrop08\\_12.shtml](http://egov.oregon.gov/OPRD/PLANS/scrop08_12.shtml)

<sup>4</sup> Again, see Finch’s article, as well as Louv, *Last Child in the Woods*

## What is 'Nature Play'?

Nature play is any type of play that includes participation with or use of the objects that nature provides, whether that be a tree, a mud puddle, an anthill, a downed tree, or any other number of other objects. For our purposes, the term 'nature play' is used in this manner, but also to refer to a specific type of park amenity; that is, a nature play area. This is defined here as **a designated area in which children have the opportunity to engage in creative, unstructured play with natural elements in a natural setting**. Such nature play areas in the District will take one of two forms, though these two will not always be separate. Both types will be discussed in detail in this document. These are:

1. **Off-Trail Play Areas:** Designated and defined sections of existing natural area parks where children are allowed and encouraged to play off-trail.
2. **Natural Playscapes:** Hybrids of traditional play areas and natural areas, which consist of a designed and constructed site that incorporates natural materials and emulates natural principles and processes.

## Goals

In establishing these types of park amenities, the District seeks to expand its role as a key provider of recreational opportunities for children, and to address the wider cultural issue of 'nature deficit disorder.' This being said, the goals of nature play areas in the District are to:

- Provide children of all ages, abilities, and socio-economic backgrounds with safe, accessible spaces in which they can interact freely with the natural world.
- Allow these spaces to be as inherently natural a setting as possible, and, when existing spaces aren't available, to design and maintain spaces with nature as the guiding inspiration.
- Appreciate the potential for play inherent within children, and to provide a setting that encourages the use of creativity and imagination rather than, or in addition to, one which allows only for prescriptive physical activities.
- Recognize the value of these spaces as means for environmental education on various levels, including spontaneous and formal adult teaching, as well as that provided by hands-on, unstructured play.
- Make areas attractive as community features.

These goals should be kept in mind when choosing and designing both types of nature play sites.

# OFF-TRAIL PLAY AREAS

**Off-Trail Play Areas** (*definition*): Designated and defined sections of existing natural area parks where children are allowed and encouraged to play off-trail.

## GOALS

The best way to allow children a genuine experience with nature is to allow them access to the areas that are already ‘wild.’ There are about 1,300 acres of natural area in the District, which range from pockets of forest in neighborhood parks to the near-pristine 222-acre Tualatin Hills Nature Park. These areas are primarily managed with the goal of habitat health and restoration, and the introduction of off-trail use has the potential to introduce undue impact on these areas. However, the benefits of introducing children to nature weighs strongly in favor of establishing such free play areas. It is therefore important to implement and manage these sites with clear intention and foresight.

That being said, the goals unique to off-trail play areas are:

- to offer children the opportunity to access, interact with, and develop familiarity with relatively intact native habitats
- to balance the general goals of nature play areas with the goals of conservation and habitat health
- to practice proactive management by implementing and managing sites in such a way as to inform and promote desired uses, in order to prevent problems before they arise

## SITING GUIDELINES

In order to best meet the goals of nature play in general and free play areas specifically, the following items should be considered in the selection of sites for free play areas in natural areas in the District.



Hyland Forest Park

### Plants and Site Condition

#### Diversity of Plant Size

The area should have varying levels of vegetation, including large trees, mid-story trees and shrubs, and smaller shrubs and herbaceous plants. The site should be navigable; that is, not overrun with blackberry hedges or thick, impassible vegetation. An open area, either created by a break in the vegetation, past removal of large patches of weeds, or past foot-traffic in the park, is desirable.

#### Habitat Health

The health of off-trail play areas should be somewhere in the middle on the spectrum between pristine native habitat and total invasive species dominance. The goal of opening natural areas to children is to create the space for them to develop relationships with the natural world, which should include a diversity of plant species, including natives. However, in opening these areas we are assuming a certain degree of disturbance to

vegetation, so areas with more valuable habitat or rare species should be excluded as possible sites.

### Undesirable Plants

Areas with established poison oak are undesirable as play areas. Other potentially harmful plants include stinging nettle, blackberry, and rose. Areas should not be located where there are large patches of these plants or where they are the dominant species, but their presence should not be grounds for exclusion. Part of the joy of playing in 'wild' nature is the encounter of pokey, prickly plants, and learning to identify and avoid them!

### Terrain

In addition to a diversity of live vegetation, there should be variations in the terrain of the area. This could involve downed trees and branches of various sizes, slope changes (though this should be limited to a certain grade to account for erosion concerns), depressions caused by root upheaval, or other naturally occurring phenomena that allow for climbing, hiding, balancing, or other playful physical challenges. In areas deemed otherwise appropriate for play areas but without much variation in terrain, additional logs, boulders, or other large natural debris from other areas or parks can be installed at the site.



Hyland Forest Park

### Water

Water should, when possible and when not designated valuable wildlife habitat, be incorporated into play areas. Features such as small streams, seasonal ponds, or even just shallow puddles offer kids the opportunity to get wet, muddy, and close to a microhabitat that contains all kinds of exciting creatures. However, if a stream already suffers from dramatic erosion or undercut banks, or if water quality is impaired in any way, adding kids to the equation will only further the problem. Due to the fact that many streams within the District suffer from these complaints, the possibility of incorporating streams into play areas may be unrealistic. If it is possible, the ideal water feature for an off-trail play area is shallow, gently moving water with banks no higher than two feet and without significant washout. Banks vegetated with large trees and established woody shrubs are best, so the impact to vegetation will not significantly affect bank integrity. Siting an area so that the stream acts as one section of the area boundary would serve an additional purpose.

### Size

The size of the designated play area will vary from site to site, but should be large enough to allow for adequate adventure and exploration, and to accommodate use by multiple groups of users. The recommended size is at least one-half to three acres, though bigger is better.

### Boundaries

The boundaries of off-trail play areas should correlate with existing, obvious borders or changes in the landscape, such as official trails, streams, recognizable habitat changes, or park boundaries. This reduces the need for high-cost, high-maintenance boundary delineation methods such as fencing. When possible, play areas should not be bounded by adjacent homeowner property.

## NATURAL RESOURCES CONCERNS

### Wildlife

When considering possible sites for off-trail play areas to be located, staff should consider the presence of wildlife in the area. If not already available, an inventory or review of the site in question should be undertaken to determine whether there is valuable wildlife habitat present and whether this is of enough significance to preclude the site as a play area. Additionally, the presence of known sensitive wildlife species or species of concern will disqualify the site.

Such species may include:

- Western grey squirrel (*Sciurus griseus*)
- Northern red-legged frog (*Rana aurora*)
- Band-tailed pigeon (*Patagioenas fasciata*)
- Purple martin (*Progne subis*)
- Northern goshawk (*Accipiter gentiles*)
- Tricolored blackbird (*Agelaius tricolor*)
- Western burrowing owl (*Athene cunicularia hypugaea*)
- Olive-sided flycatcher (*Contopus cooperi*)
- Willow flycatcher (*Empidonax traillii adastus*)
- Acorn woodpecker (*Melanerpes formicivorus*)



Acorn woodpecker  
(Image: bird-friends.com)

The presence of beaver in an area also poses a safety concern for siting nature play areas, due to the nature of beaver chew on vegetation, which creates a sharp wedge or point on the remaining stump. Though the presence of beaver should not be a precluding factor in an otherwise appropriate site, this is an issue that should be considered and accounted for in site selection and safety inspections.

### Erosion

The impact of opening natural areas for off-trail use will inevitably incur disturbance of vegetation, ultimately resulting in soil exposure and bare areas. Any time this happens, erosion becomes a concern, especially on steep slopes. For this reason, free play areas should not be sited in areas where there is significant slope. Variations in slope throughout a site are to be expected, but attention should be paid to the general character of the site; the overall slope of the area should be less than 20% (see Figure 1).

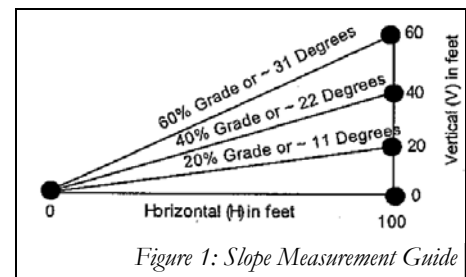


Figure 1: Slope Measurement Guide

## MANAGEMENT

### Safety and Maintenance

Similar to other play areas in the District, recreational immunity (i.e. play at your own risk) will apply to off-trail play areas. Because these areas do not include a built environment, there are no established safety standards that the District is legally required to fulfill in these areas. However, measures should be taken to ensure that no hazards beyond those reasonable to a natural area will occur. Regular site inspections will be made for hazard trees and branches, poison-oak, and any other obvious issues of concern. These visits will also involve litter removal and a general inspection of the site to note how it is being used and any apparent issues that may arise. Because these areas will remain natural, maintenance inspections should be undertaken by Natural Resources staff rather than Park Maintenance. Natural Resources staff are already trained to identify natural area hazards and determine the general health of a



habitat, both of which will be the main focus of safety inspections. Initial site visits will be undertaken every other week or so, with eventual safety and maintenance visits occurring once a month.

## Boundaries

In addition to the natural indicators of boundaries determined in the siting of a play area, boundaries will be distinguished by visible markers. These markers will consist of 30-inch tall, 4x4” posts, marked as shown in Figure 2. These will be posted every 15 feet around the perimeter of the play area. We will later evaluate whether this is enough of a boundary to contain activity within the area, or whether a fence is required. Different sites may require different approaches.

## Rules

Standard posted park rules will apply to free play areas. Additional rules not typically posted but listed in the District Rules and Regulation handbook will *not* necessarily apply to these areas, including off-trail play activities such as building forts, climbing trees, wading in streams, and digging in soil. However, certain activities will remain prohibited, including paintball guns, destruction of vegetation, and excavation of soil deeper than 18 inches<sup>5</sup>. As a new and unprecedented park amenity, this project obviously falls into a regulatory gray area. Because of this, it is important to clearly communicate the District’s expectations to patrons, via signage and staff presence, and to observe how the site is being used and modify the rules and/or signage as necessary.



Figure 2:  
Boundary Marker

# PUBLIC OUTREACH

## Signage

Two basic types of signs should be incorporated into the nature play facility: one regulatory sign that emphasizes the rules of the area, and one more educational interpretive sign that informs of the intention of the play area and encourages certain activities. Because the concept of a designated nature play area is likely to be foreign to patrons, simply cordoning off a section of park and placing a list of “don’ts” at the boundary will not be sufficient to fulfill the big-picture goals of these areas, and may serve only to confuse or inspire misuse of the area. In order to make the play area inviting and truly available to a wide range of park patrons (beyond those who are already using them against current park rules), a positive and informative sign should be placed on site, either at the perimeter of the play area or at a main entrance to the park. In addition, posting temporary, laminated informative signs at all of the park entrances may be appropriate when play areas are first implemented.

The **regulatory sign** should be placed at conspicuous sites along the perimeter of the play area. It will be modeled from the Type R Sign Family from the District’s Signage Master Plan, and should include the following (see Appendix A):

- Indication of off-trail use
- “Play at your own risk” statement
- Statement that other posted park rules apply and pictograms of applicable standard rules as a reminder (NO: fires, guns, litter, dogs, camping)
- Statement of boundary and description of markers
- Natural Resources phone number

<sup>5</sup> Any soil excavation is prohibited in the standard park rules; however, a degree of this activity will be allowed in play areas. Rather than post a sign with a certain depth allowance and inspire this activity, this rule will go unspoken, unless it becomes an issue.

The **interpretive sign** will be designed appropriately for each site, and will be located either at the play area itself alongside the regulatory sign, in the context of a larger park sign at an entrance, or both. It should include the following (See Appendix A for example):

- Statement of *intention* of the nature play area
- Map of the play area boundary in the context of the park
- Simple educational description of the habitat type, if appropriate
- List, statement, or pictures of encouraged activities (i.e. turn over a log and see what's underneath, build a fort from forest materials, climb trees and logs). These activities should encourage nature play, while discouraging disrespectful use of the area.
- "Please respect plants, wildlife, and other play area users", or a similarly worded request



### Staff Presence and Additional Outreach

During the initial implementation of nature play areas, there should be a high level of involvement on the part of Natural Resources staff. This may involve:

- Frequent informal visits by Rangers, who can act as educators and positive authority figures, and make observations on the use of the areas.
- Ranger Walks or volunteer events in the park or those nearby with mention of play area.
- Events in the area itself (i.e. "Build a Fort with a Ranger!", large-scale hide-and-go-seek, or other types of nature play programming).
- Other types of informative outreach or marketing. The more people know about the area and are encouraged to explore and use it, the less likely it will fall to unintended uses.

# NATURAL PLAYSCAPES



**Natural Playscapes** (*definition*): Hybrids of traditional play areas and natural areas, which consist of a designed and constructed site that incorporates natural materials and emulates natural principles and processes.

## PRINCIPLES

In addition to the wider goals of nature play, there are further goals unique to natural playscapes. These goals should serve as guiding principles to be considered when siting, designing, and building playscapes. These are:

- To use nature as a baseline and inspiration in designing and implementing play areas
- To provide a setting for children to participate in a diversity of types of play
- To include elements in the playscape that actively engage the five senses

## Emulating Nature

Given the shortage of truly ‘natural’ spaces in urban and suburban environments, and the need to preserve the majority of what remains, the creative use of existing open spaces can provide the opportunity to reconnect children with nature without creating an undue impact on natural habitat. The design of natural playscapes should be inspired by wild nature, and should involve the use of natural elements and materials, imitation and incorporation of natural processes and principles, and any other means of directly introducing children to the natural world. This emulation can manifest in various forms, including using specific ecosystems, regions, or animals as the inspiration or ‘theme’ for a site, incorporating plants that emphasize the changing of the seasons, creating interactive habitat that will attract native wildlife, or creating built structures that imitate the movements or habitats of animals in the wild.

Much like a natural ecosystem, in which plant and animal species are separate entities but ultimately interconnected, a natural playscape should be a comprehensive whole rather than a sum of disparate parts. Each element should be intentional and connected to others, allowing children to transition from one activity to another as they see fit. However, this intentional placement should have a feel of randomness to it, much like a truly ‘natural’ space. Likewise, each play area should fit the specific site, utilizing the natural resources that are there to begin with and incorporating them into the playscape design.

<sup>6</sup> Left to right: naturalplaygrounds.com; Freiburg City Council, Germany (photo: Lindsey Houston); Murergaarden, Copenhagen

## Variety of Play Activities

Typical play structures tend to focus on locomotor play, emphasizing large, active movements like climbing, swinging, sliding, and balancing. Additionally, the design of these prefabricated structures tends toward more prescriptive activities, without much room for free movement or creative, imaginative play. Natural playscapes should provide means for such active play, but should also incorporate the basic framework and raw materials from which children can create their own play experience. They should, as much as possible, allow for a variety of types of play and activity, including:

- physical play, including locomotor activities as well as informal sport (i.e. chasing, running, hide-and-seek, etc.)
- exploratory play
- construction and destruction
- creative play with loose materials
- social interaction
- imagination and ‘playing pretend’
- quiet contemplation and solitude

In addition to providing for a variety of play activities, playscapes should be accessible to users of a range of ages. However, the design should focus on providing for varying degrees of ability rather than specifically targeting certain age groups. Through careful design, play spaces can include elements for both younger and older children, of all types of ability, in all of the above capacities, without being prescriptive about who uses what.

## Sensory Experience

In addition to providing the context for the above types of play to take place, playscapes should incorporate elements that appeal to all of the senses, and which encourage sensory interaction with one’s environment. As much as possible, these elements should imitate the methods in which nature stimulates the senses. They can either be incorporated into the playscape without attention drawn to their presence so that children can discover them on their own, or be arranged as a specific feature of the site. Below are some examples of sensory elements, but this is by no means a finite list.

- *Sound*: weatherproof, interactive musical elements such as chimes, xylophones, bells, or drums; small bells placed in trees
- *Smell*: fragrant plants, including flowers, shrubs, and trees, either sporadically placed or in a designated ‘smell garden’
- *Taste*: woody shrubs or trees with edible fruits (see plant section, below); ‘taste garden’
- *Feel*: materials with a variety of textures (this concept will likely be incorporated throughout the site rather than as a focus of specific elements); plants with unique textures (i.e. beech trees, madrones, willow catkins)
- *Sight*: flowering plants, hidden hieroglyphs or simple pictures, natural and interactive art, interesting plants or flowers



Rusty Keeler,  
*Natural Playscapes*  
(.planetearthplayscapes.com)

## ELEMENTS

With these principles in mind, constructed natural play areas should incorporate a variety of elements into their design, including built structures, landscape elements, and intentionally placed items. Studies have shown that play areas that combine built play features with natural elements (rather than either

independently) engender the highest activity levels in children<sup>7</sup>. Below are some guidelines and recommendations for these elements, but this is by no means a complete list, and there may be some overlap between each category. Creative interpretation of the above principles, inspired by the suggestions below, can allow for a unique and successful playscape design that is appropriate to the specific site.

## Site Characteristics

Before the design process begins, the site itself must be selected. The elements of the playscape should be chosen based on the existing character of the site; topography, vegetation, natural features, or other characteristics should be incorporated into the design as much as possible. Although any piece of open space can be creatively transformed into a natural playscape, there are certain features that will make a site more successful. The most desirable characteristics for a playscape site are:

- *Varied topography*, which may include slopes, trenches, mounds, divots, or other changes in terrain.
- *Existing trees* of any size, though a grove of larger trees with a healthy canopy is most desirable, in order to evoke a ‘forested’ environment and to provide shade, clean air, and possible climbing features.
- *Established vegetation* cuts down on the time it takes to establish a healthy and interactive plant presence in the playscape and lends a more natural feel to the site.
- *Flat, open area* that children can use for spontaneous sports or games. Turf is fine.
- *Proximity to natural areas* that are either designated off-trail play areas or have trail access so that kids can experience natural habitat onsite.

## Built Structures

These structures are most similar to typical modern playground structures in their intent, but may differ in their materials and their appearance. There are unlimited options for such structures, but they should, in general, creatively follow these guidelines.



Coombe Abbey Country Park, UK  
(Image: Coventry City Council)

- Be made of natural materials (i.e. lumber, rope, rock, etc..) and/or be appropriately ‘nature-themed’
- Adhere to the same general safety guidelines as more traditional play structures
- Allow for locomotor play activities, including balancing, swinging, climbing, or other physically challenging activities

Examples of such structures, which adhere to these principles and would be appropriate to the playscape include:

- Log and rope climbing structures
- Nature-themed play sculptures
- Structures that are built to imitate the activities of animals in the wild
- More traditional types of freestanding play equipment (i.e. swings, teeter-totters, slides, etc.) made from natural materials or otherwise incorporated into the flow of the playscape.

See Appendix C for photos of other examples of built structures.

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<sup>7</sup> Cosco, Nilda. (Feb. 2007) “Motivation to Move: Physical Activity Affordances in Outdoor Preschool Areas.” North Carolina State University. See <[http://www.activelivingresearch.org/files/Cosco\\_Recreation\\_2007.pdf](http://www.activelivingresearch.org/files/Cosco_Recreation_2007.pdf)>

## Landscape Elements

**Plants**<sup>8</sup> should be consciously incorporated into the design of nature playscapes, not only as an aesthetic element, but, more importantly, as an interactive piece of the play area. In general, vegetation should be low-maintenance, resilient, and emphasize native plants, and should be densely planted in order to best evoke a sense of wild nature.

- *Trees* should, if possible, be present and established at the site, giving the area a forested feel and possibly allowing for climbing. If trees are not already present, they should be planted at appropriate places throughout the site.
- *Perennial edibles* allow for fun discovery and taste exploration. Natives may include thimbleberry, huckleberry, or salmonberry. Non-natives possibilities are raspberry, blueberry, figs, grapes, or apples. These may be incorporated throughout the site or together in a designated ‘taste garden.’
- *Interactive plant features* such as a willow dome, tall-grass maze (or a section of unmowed tall grass for kids to play in), sunflower house, or other creative concepts should be incorporated into area design.
- *Fragrant and colorful flowers* serve the dual purpose of engaging the senses and attracting wildlife. Species known to attract birds and butterflies should be included, which means that natives should be emphasized.



Living willow dome, Quinton Church of England School, Birmingham, England (Image: Creative~States)

Plants can also be used to define areas of the site without separating them, to separate the playscape itself from the rest of the park or to screen it from nearby roads or neighborhoods, or to create ‘secret’, isolated areas where kids can play separately from others.

*Discouraged plants* include

- invasive species
- those that can cause injury or harm to individuals (i.e. irritable plants like stinging nettle or poison oak, or thorny plants like hawthorn or rose)
- those that have inedible fruiting bodies that might be harmful if ingested (i.e. snowberry, Pacific yew, red elderberry)



Botanical Gardens, Oslo, Norway (Photo: Frode Svane)

**Water** is a fundamental aspect of nature in the Northwest, and is one of the elements most likely to engage children’s attention. Sustainable and creative water-play features should be included in nature playscapes, taking water conservation into account and utilizing rainwater and/or on-site sources when possible. Water combined with earthen material like dirt or sand can provide hours of entertainment for a wide range of ages. Small pools, puddles, and muddy areas, running water, and shallow catch-basins are all possibilities for playscape features. If possible, the feature should be designed so that it is usable as a play feature when there is no rainwater available or the water is turned off. The difficulty with water is that it is generally a desirable play feature during the hot

<sup>8</sup> See *Plants for Play: A Plant Selection Guide for Children’s Outdoor Environments* (Moore, 2004)

summer months when conservation is a more pressing concern, and less appealing in the winter, when there is plenty of it available. Devising creative solutions to this issue should be a focus of developing playscapes in the District.

**Topography** of a site can serve as a play feature in itself: rolling down hills, hiding in dugouts, and playing ‘king of the hill’ are all activities that require nothing more than variations in the landscape. The existing topography of a site should be exploited to this end, and design of a playscape may also call for alterations of the landscape to change the ground levels within and around the site. Concave modifications can also serve to catch and hold rainwater, creating temporary water features. The presence of flat, open spaces is also desirable, as these are always well-used for spontaneous games, gathering places, and other uses.

**Pathways** winding throughout the playscape create connection between play features and lend an overall sense of unity and fluidity to a site. They function as an unofficial park feature as well, encouraging physical activity and social interaction. Wide, hard-surface paths provide accessibility and are appropriate as the primary thoroughfare through a playscape. Narrower, soft-surface trails that meander through the area, and which connect to nearby natural area trails, if available, can lend a sense of exploration. Pathways should generally be sinuous and curvy, imitating the never-straight lines of nature. They can also be created by stepping stones, stone slabs, wood rounds of slightly varying heights, or concrete cast slabs with ‘fossil’ impressions.

### Placed Items

Logs, wood rounds, large stones, and boulders can, when cleverly placed, serve multiple uses in the playscape setting. They can function as play equipment, as a place for kids to climb, balance, and pretend, or as seating for kids or parents.

**Downed trees** are a common feature in forest settings, so their presence in a playscape enhances the natural appeal of the area. Logs of various sizes, species, and states should be included throughout the site. Different states of logs may include those hollowed out to create a natural tunnel or left whole, those stripped of all bark or in their original condition, with bark, moss, ferns, and other natural attributes left intact. In all cases using trees felled in other District parks is a sustainable approach and, in the latter case, increases the potential presence of insects, fungi, and other small-scale wildlife that



Canteloves Gardens and Skatepark, Camden, UK (Image: Camden Council)



Waverly Park, Isle of Wight, UK (Image: Nicole Butler)

serves such an essential role in natural processes and which kids find fascinating. A similar potential play feature is felled trees or root masses, with the branches and roots retained for climbing. Adding climbing nets or ropes to these creates another level of play potential.



Elm Village Playscape, Camden, UK

There are innumerable uses for well-placed arrangements of wood rounds of various sizes and heights in natural playscapes. Stepping stones, chairs, and climbing and balancing features are only a few of the possibilities for wood rounds at these sites. Again, these are best obtained from within the District, and communication with arborists and other relevant maintenance staff can cut out the need for outside sources, not to mention delivery costs.



Bay Area Discovery Museum



Landscape Structures, Inc.  
playlsi.com

**Stones and boulders** can serve many of the same functions as those mentioned above. When boulders are intended to be used as climbing features, they should be hand-picked for textural complexity without sharp edges, to make climbing interesting but not needlessly dangerous. Real, local stone should be used when possible, but another option is fabricated climbing structures similar to that pictured here, which is made from glass fiber reinforced concrete. The benefit of such structure is its durability, size, and accessibility, and it may be appropriate for some sites, especially in combination with real stones or boulders.

**Loose materials** that would typically be removed from play areas should be not only tolerated but purposely introduced in areas outside of the fall surfacing zone beneath built structures. This may include branches and sticks, fallen leaves, pine cones, and other natural debris that can provide the raw material for hours of creative play.

In addition to the informal seating created by placed objects, **formal seating** for parents and other adults, with a flattened seat and back support, should be incorporated in the playscape. Including picnic tables or similar seating/gathering areas is also a possibility. Again, these items should be incorporated into the flow of the playscape, and follow the materials guidelines, below.

## Materials

One of the goals of nature play is to allow children to have a sensory experience of nature, which means that **natural materials** should make up the majority of the playscape. Man-made materials should be used only when they are determined to enhance the play value of the area (examples being musical features, some built structures, and the 'stone' climbing structure mentioned above). When man-made materials are incorporated, they should be **recycled, reused, or otherwise sustainably sourced**. Plastic should be avoided as much as possible; again, the goal is to allow children a tactile experience with nature.



## PRACTICAL CONCERNS

Because natural playscapes differ significantly from conventional play areas, there are certain short and long-term implications that must be considered prior to instituting them.

### Safety and Liability

The concept of natural playscapes has developed in part from dissatisfaction with prefabricated structural play equipment, which was originally developed in response to increased demand for uniform playground safety guidelines. As playscapes become more common, specific standards will evolve out of collective experience, but given that this is still an innovative concept, no such standards currently exist. Because of this, natural playscapes call for careful and thoughtful consideration of safety concerns, while taking into account the need for a certain degree of risk in children's development.

Natural playscapes are generally considered 'no-risk' areas (as it applies to liability), and typically installed with an inherent trust in the concept of recreational immunity ('play at your own risk'). In developing these areas, the site design should, as much as possible and when appropriate, adhere to the same basic guidelines as traditional playgrounds. The general safety guidelines that apply to nature playscapes include:

- **Loose-fill surfacing** in areas where there is movement (i.e. swings) or danger of fall injury from a play surface. The current requirement for fall surfacing is below any 'designated play surface' ("any elevated surface for standing, walking, sitting, or climbing, or a flat surface larger than 2"x2" having less than 30° angle from horizontal") higher than 30" from ground level. Wood mulch, wood chips, sand, and pea gravel are all appropriate surfacing materials for nature playscapes.

Minimum compressed loose-fill surfacing depths <sup>9</sup>				
Inches	Material	(protects to)	Fall Height (ft)	Cost
9	Sand		4	Medium
9	Pea Gravel		5	Low
9	Wood mulch		7	Medium
9	Wood chips		10	Low

Design measures should be taken to creatively contain the area that houses the fill material without affecting the 'flow' of the playscape. This needs to serve as a means to prevent intrusion of other materials, as this contamination affects the fall attenuation of the surfacing material (as different materials protect to different fall heights). Good drainage of the filled area is also essential to ensuring that the material serves its purpose, and reduces the amount and cost of necessary maintenance.

Creative design of the area can also reduce the need for extraneous amounts of fall surfacing, by keeping most elements at ground level and incorporating topography into the landscape (i.e. setting a slide into a hillside rather than setting a freestanding slide on a flat surface).

- **Prevention of hazards** such as open 'S' hooks, protruding bolt ends, or sharp points or edges.

<sup>9</sup> From Public Playground Safety Handbook, U.S. Consumer Product Safety Commission

- Precautions to prevent **head entrapment**. If the space between two parts is more than three and a half inches then it must be greater than nine inches to avoid potential entrapment.
- **Anchoring** of standing equipment to prevent tip-over risk. This applies mainly to built equipment in the playscape, but large placed items such as logs and rocks should be secured as well. The extent to which an element needs to be secured should be determined by the size, shape, and purpose of that item.
- **Routine preventative inspections** to check for broken or damaged play elements, loose or frayed ropes, or other potential hazards that may arise over time.

Current playground regulations generally apply only to play equipment, because built structures have typically been the standard for playground development. When designing a playscape that incorporates natural elements such as logs and boulders, creative interpretation of existing guidelines, solid common sense, and conversations with appropriate risk management and playground safety staff should be sufficient means to fulfill the District's legal safety obligations.

## Maintenance

Natural playscapes will require a different approach to maintenance than that used for standard playgrounds. Some of the main principles governing maintenance include:

- Planted and in situ vegetation should be kept in a relatively 'wild' state. Aggressive non-natives should be removed, but plants should generally be allowed to grow as they will.
- Depending on the design of the site, certain grassy areas will require mowing and others will be allowed to grow as part of the playscape. These areas must be clearly communicated to maintenance staff.
- Fill surfacing will require occasional raking and replacement in order to maintain the depth necessary for fall safety.
- Rocks, leaves, branches, cones, and other natural debris that would usually be considered undesirable in play areas should be left in nature play areas, except for when it poses a contamination risk to fall surfacing material.
- Staff should *not* trim or prune lower branches of trees in play areas, except for dead branches that may pose a safety risk. Although fall surfacing is not necessary beneath possible climbing trees, the area should be inspected for possible hazards.

## Outreach and Community Involvement

The conception of natural play areas has arisen from a wider paradigm shift that is taking place, one that is beginning to recognize the value of the natural environment. However, because this idea is still new, there is a certain degree of cultural inertia that must be overcome in order to establish natural play areas as the 'norm.' Although the initial general reaction to natural play areas has been positive, as a new and innovative concept, and with goals that transcend those of typical playgrounds, the introduction of these areas should be accompanied by outreach and community involvement. Where applicable, the following guidelines apply to free play areas as well.

The goals of such outreach are:

- to attract and familiarize kids to nature play areas.
- to inform parents of the short- and long-term developmental, health, and socio-environmental benefits of natural play.
- to ease parent fears about safety and to address any other concerns that might arise.
- to take advantage of the opportunity for informal environmental education.

Outreach and involvement may include (but should in no case be limited to):

- Involving kids in the design stages, which serves the double purpose of engendering a sense of ownership in the site itself and obtaining the invaluable input of creative minds.
- Involving the community in the simpler aspects of construction, via volunteer events.
- Partnering with schools, non-profit organizations, or other interest groups.
- Advertising and marketing the areas, which can include onsite signage, grand opening ceremonies, neighborhood events, or even TV commercials.
- Natural Resources or other staff presence at playscapes to provide on-site, spontaneous outreach and education, and to glean feedback from kids and caretakers.
- Establishing scheduled programs (i.e. environmental education, nature play-themed programs, or a hybrid of the two) in or adjacent to natural play areas.

# Nature Play Area

**This section of natural area is designated for off-trail play. Other posted park rules apply.**

Please keep activities within the boundaries of the play area. Boundaries are designated by blue posts.



**(GUNS)**



**(FIRES)**



**(CAMPING)**



**(DOGS)**



**(LITTER)**

**THIS IS AN UNSUPERVISED AREA.  
PLAY AT YOUR OWN RISK.**

**Natural Resources Department 503 629 6305**

Violators subject to exclusion and/or fine.

**Metro Parks**

# METRO PARKS Natural Play Area

Feel free and have fun exploring nature at your Metro Parks

Enjoy the sounds

Play in a stream

Dig in the dirt... look for bugs and worms

Climb trees and rocks

Please be careful and respectful of others and nature  
Leave nature today, and return to it tomorrow

Appendix B: Design Ideas – Natural Elements  
 (most of these are from Oregon Recreation and Parks Association/Oregon State Parks)

<p><b>Exploratory topography</b>                  Mounds                  Curves                  Pits                  Berms                  Stone walls                  Sand pits                  Water courses                  Mud areas                  Natural amphitheaters</p> <p><b>Small pieces</b>                  Boards                  Blocks                  Wooden boxes                  Tree cookies                  Stump stool</p> <p><b>Malleable &amp; loose materials</b>                  Sand                  Water                  Leaves                  Clay                  Stones                  Sticks</p> <p><b>Sensory Awareness</b>                  Listening stations                  Taste gardens                  Spring/autumn color trails                  Smell gardens                  Wind tunnels                  Rain sticks                  Bongos</p> <p><b>Variety of spaces</b>                  Trellises                  Low walls                  Bridges                  Willow fencing                  Changes in level                  Changes in plants                  Playgrounds on water</p>	<p><b>Different Types of Vegetation</b>                  Wild areas                  Native plants                  Wildlife attracting plants                  Edible plants                  Shadow patterns                  Focal points/specimens                  Plant sculptures/tunnels                  Willow fencing                  Sunflower mazes</p> <p><b>Resting/quiet spots</b>                  Gazebos                  Pergolas                  Arbors                  Shade tents                  Benches                  Grassy areas                  Tables                  Secret places in vegetation</p> <p><b>Places for first-hand interaction</b>                  Butterfly observation areas                  Frog ponds                  Birdhouses                  Nature paths</p> <p><b>Things to show change</b>                  Rain collection ponds                  Rain gauges                  Shadow-play                  Sundials                  Seasonal Streams                  Deciduous trees                  Wind stations</p>	<p><b>Outdoor art</b>                  Wall murals                  Sound gardens                  Play sculptures: land, vegetation, natural materials                  Fountains                  Children’s art                  Rain structures                  Wind structures                  Nature art</p> <p><b>Physical challenges</b>                  Balance beams                  Logs                  Ropes                  Climbing areas                  Trails                  Digging areas                  Boulders                  Log steps                  Crawl-through log                  Stairs                  Slopes                  Stepping Stones</p> <p><b>Opportunities to learn and teach</b>                  Amphitheaters                  Interpretation signs                  Experimentation stations                  Educational trails                  Plant ID labels</p>
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Appendix C: *Examples - Built Structures*<sup>10</sup>



<sup>10</sup> 1 Sherwood Pines Forest Park, Nottinghamshire, Great Britain (Image: Lynne Kirton); 2 Landscape Structures, Inc. (Company Product), 3 Teardrop Park, Manhattan (Image from ORPA “Natural Play Areas”); 4 Image from ORPA ibid 5 Timberplay (Company product), 6 Artist made play structure, Darnley Park, Stirling, UK (Image: Sue Gutteridge); 7 Waverly Park, Stirling, UK (Image: Stirling Council Play Services) 8 Image from ORPA ibid; 9 Dreamweavers (Company Product)

## Resources

Naturalplaygrounds.com

Dreamweavers (Natural Jungle Gyms) <http://dream-weavers.co.za/>

Timberplay <http://www.timberplay.com/> ; see catalogue at <http://www.unitedplay.com/webcatalogue/>

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