

## **Natural Playground Maintenance**

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*Natural Playground maintenance is easy and costs no more than you're now spending on your old playground. The three biggies? Managing Grass, Maintaining Fall Zone Levels, Preserving Wood.*

Over the past several years, we have learned something about why some of our customers have difficulty adapting to a natural playground site, so the more we discuss and impart now, the easier it will be for you to take over once we've left.

Because our customers have been used to traditional playground equipment, the maintenance for which requires no participation on their part, they somehow think that a natural playground will also not require their participation in making sure that the play area retains whatever features they identified as being important to them in the very beginning.

Outdoor learning and play environments are imperfect. They develop wear patterns, which are almost entirely due to heavy heavy use. If traditional equipment was used as heavily, and for as long periods of time, despite it being plastic and metal, it would wear out very quickly.

But the fact is, pieces of equipment get almost no use compared to a hill with grass on it. And children can actually learn from a hill with grass on it! There is the opportunity to teach about everything from physics (friction, momentum, and speed from rolling down a hill), to entomology, with just a little bit of guidance. After a little encouragement, children will naturally start to inquire about things on their own, which is the beginning of critical thinking.

### **Maintaining Grass on your playground**

It's never too early to talk about the single biggest problem on a natural playground, and that's ground cover. Despite our constant reminders, ground cover is never given the entire year it needs to establish itself, nor are steps taken to make sure it's getting the care it needs, nor is the amount of time children spend on the

grass limited at certain critical times, mainly because the children want to be on it all the time!

The chance of grass surviving is entirely dependent on you following the suggested maintenance plan we provide in our Maintenance Manual (See Vegetation Section below), which basically says to stay off it until it's had enough time to root! We recommend a *minimum* 4 to 6 weeks, and after that, it will need as much as a full year to get to the point that maintenance will significantly decrease. Children's use will have to be curtailed for periods of time while the groundcover recuperates after heavy use. When the ground is saturated after heavy rains, or after the snow melts, the children can't be on it at all which is uncomfortable but necessary to ensure it's viability.

Here's a photo of a sign on the lawn in Bryant Park, New York City. Hundreds of people were sitting around the outside of the lawn, respecting the city's warning that the grass/soil needs to dry out so it doesn't get packed down and kill the roots!! (*see below for their blog*)

If this can be done in New York City, you can certainly do it at your facility!!



So to review: The major reason grass dies on playgrounds is because of compaction! We cannot emphasize this enough. We discuss this in detail because we'd like you to completely understand what is going on so you can take the appropriate steps to avoid or address compaction issues before all of your grass dies.

Compaction is a killer because it squeezes all of the air out of the soil, which then suffocates the roots so the grass dies.

Even if moisture in the soil is optimal, overuse will quickly compact the soil, squeeze all the air out of it, and kill the grass.

If the soil is moist or wet from irrigation, rain, or snow melt, and children are allowed on it, two things are happening:

- the grass is working hard to survive because it may be starting to suffocate from too much water, and
- the children running all over it are packing/compacting the wet soil.

Remember how clay bricks are made? You wet down the clay soil, pack it into a brick form which squeezes all the air out of it, and then you let it dry, and when it dries, it's as "hard as a brick." This is exactly what happens to your soil, which is why your grass dies.

There are definitely other issues that can affect grass like grubs, too much shade, lack of water and nutrients, and pest infestation, but on playgrounds, compaction is the killer.

The grass needs to be left alone after a heavy melt, rain, watering, or particularly dewy morning until it has absorbed and dispersed most of that moisture. In our part of the country here in the Northeast, the spring after grass is installed is a very sensitive time. It can stay saturated for a couple weeks or more while the snow and ice melt dissipates, and if children are allowed on it during this time, all of the above compaction issues are exacerbated. Rainy seasons are the other ones to watch out for.

Grass roots can grow 6” or more but that takes time, but if they are allowed to reach that optimal length, it gives them a much better chance for surviving abuse from overwatering, under watering, and compaction. In most cases, it’s at least one full season.

After a season and the roots are long enough, even when it’s wet, the compaction zone should be shallow enough that the roots extend below it and won’t get choked off. It’s why an old lawn is hard as cement (completely compacted) but the grass is nearly bullet proof. The roots extend below that “cement layer” and provide the necessary nutrients to keep the leaves vibrant and strong.

Regardless, compaction must be a concern throughout the year. There are many techniques for addressing it, the two most common of which are coring and spiking performed four times a year (except where grass foundations have been installed - see below), or more often if the play area is under constant, heavy use.



At the same time, the grass should be fertilized and over-seeded.

After it’s been aerated, make sure that no child has access to any grassed area when it’s wet and if at all possible give it a few weeks to recover.

We realize that instituting this kind of control on a very active, crowded playground is very difficult, and takes careful planning. We suggest that you mark out use zones on the playground so that you can rotate children through them based

on the maintenance going on in them. Depending on the area/s undergoing maintenance, it can be marked off with caution tape for whatever period of time is appropriate for the maintenance.

Another very simple technique is to change access routes using cones or tape so that children are invited to access the playground from different points on different days throughout the week.

Lastly, don't mow it ever, but if that's not possible, mow it tall, ***absolutely no less than 3 inches***. The longer the blade, the more water and nutrients it absorbs, the longer its roots, the healthier it gets, and everything is copacetic!

If the ground cover dies, people (read parents) might complain about the look, or that it's muddy or dirty, so there are two choices: either start over and replace the ground cover (or sections of it), or let it stay as exposed earth.

If you decide to replace the ground cover, then again, you'll need to follow a strict plan for the duration of the time it takes for the roots of the ground cover to grow 3.5 to 5 inches deep so they get below the compaction zone.

Here's why: each blade of grass has a root, and that root is what provides water and nutrition to the blade of grass. At the same time, the blade of grass is performing photosynthesis which is critical for its survival, so both the root and the blade work together to survive.

If the grass is mowed to a height that is less than 3 inches, then the blade can't perform its necessary function.

If the ground is compacted, then the root can't perform its necessary function of breathing and drinking.

Therefore, keeping blades of grass at least 3 inches long, and keeping the soil around the roots aerated so they get water, nutrition, and air are the fundamentals for keeping your grass alive and well.

Such a plan isn't all that time consuming or expensive, but it is uncomfortable. The children can't be on the grass when it's got any more moisture on it than morning dew. If it's wet and/or saturated, they can't be on it, because wet soil compacts and will strangle the roots. To combat compaction, the ground needs to be aerated regularly (using a lawn roller with spikes in it, which can be rented). We suggest a minimum of twice a year (but as many as four times), and after aeration, children really should not be on the grass for a period of at least 7-10 days.

If areas see wear and start to die, then those areas have to be blocked off until the ground cover recovers.

If you decide not to bother with replacing the ground cover in those areas, they won't look pretty, but when the benefits are weighed, the look may be okay with you, because the overall maturation and development of the children will be demonstrably different because of the time they are spending outside and the things they are learning while out there.

Those parents that don't like how the space looks and/or the fact that their children might be a little dirtier than they would be in a sterile, typical playground environment, need to be educated. Show them how their child has changed for the better and how much of that had to do with being outside.

Even if they still don't think it's worth the payoff, we bet they will cease to be concerned about the look and the dirt because they'll notice that their children love it and are showing levels of advancement and learning they haven't seen before.

The ground will also require some additional soil or fill annually to replace those areas that have eroded because they've lost the ground cover. It isn't expensive and it isn't all that time consuming, but it is a bit of a hassle. Again, it's up to you to weigh the benefit of the natural playground against that hassle.

When we leave, everything will be in working order. We will teach a maintenance person or someone else of your choice how to use and adjust the irrigation system. But once we've left, the maintenance and adjustment of that system is entirely your responsibility.

We're happy to help trouble shoot at no cost and spend time discussing anything that's of issue, but unfortunately, we have no control over who is on the natural playground and how it's being used after we've left. But aside from that, irrigation systems rely on water pressure, heads that pop up and down using both water pressure and gravity, and fine adjustments within the head that are easily damaged, so we can promise you that you will need to replace an irrigation head or two from time to time.

The children will accidentally kick the heads, or one will be mangled when you're mowing, or deer will run through the space and force the heads below the ground so they won't pop up. In all likelihood you will have to physically pull some of the pop ups up and clean them out because they won't pop up, and occasionally you're going to have to adjust the spray patterns of those heads.

It's just the nature of having irrigation in a large space with lots of use. None of the things necessary to keep it functioning properly are difficult, but they will have to be done, and because they are ongoing and just part of having an irrigation system, we obviously can't be responsible for taking care of these small issues after we've left.

Thankfully, the critical necessity for irrigation will diminish as the ground cover gets more established, but you're always going to need to water at times, so it's very important that you take on the minor adjustments and maintenance of that system once we've left.

We always suggest that you involve the children in everything. It wouldn't hurt to teach them about the irrigation and why it might require an adjustment. Simple questions to get them to think are a fantastic way to introduce them to different subjects. The same could be done with all the maintenance that goes on and/or anything that happens within the space that is affected by their use.

You have a living, breathing, natural play environment, so like your lawn or garden at home, it requires tender loving care in order to continue providing you the benefits that you initially sought!

\* *FROM THE [bpc@urbanmgt.com](mailto:bpc@urbanmgt.com)*

One of the best features of the park is our emerald green lawn. This season, we've kept you updated on the lawn's life cycle, from installation to opening day. In this post, we explain why the lawn is sometimes closed. It can be confusing to see the lawn closed on a gorgeous day, but rest assured it's not without good reason!

We want the lawn to stay soft and green all summer long. If we don't protect the lawn when it is vulnerable, it will not withstand the demands of the summer and will die within a few weeks--it is, after all, a living organism. We've seen this kind of lawn deterioration firsthand in previous summers and it is not pretty.



*We want the lawn to look like this all the time.  
We haven't always been as good at maintaining the lawn as we are now.*





*...and this was the lawn by August 2003. The lawn loses much of its charm when it's dry, patchy, and brown!*

Keeping in mind that the lawn is best when it's green, here are the circumstances under which we close the lawn:

- 1) **When it's wet.** Moisture from rainfall and sprinklers softens the lawn, making it more delicate and prone to ripping under thousands of feet. We keep the lawn closed until it has dried sufficiently to withstand use by our visitors.
- 2) **For maintenance.** The lawn occasionally needs to be mowed or aerated, two tasks that are much easier to do (and safer--think of the heavy machinery involved!) without guests on the lawn. When the lawn is fertilized, the chemicals need time to be absorbed into the ground--not the bottom of your shoes!
- 3) **For rest.** Before and after large weekly events like the HBO Bryant Park Summer Film Festival, which can draw over 10,000 people, the lawn is closed. This helps the lawn be resilient all summer and recover faster from times of heavy use. Just imagine how you'd feel if you didn't sleep for weeks! Managing Grass

## **Maintaining Fall Zone Levels**

This is a simple one. The following chart is from The Consumer Product Safety Council (CPSC) Handbook for Playground Safety.

Bring a ruler with you, look at the material in each of your fall zone areas, and make sure that they are at the minimum depth required for the “fall height.” 9” is a safe depth for all materials, though we usually use 12”.

Woodchips and engineered wood fibers (EWF) have a tendency to rot, and when they do, they turn into “soil” which can compact and no longer offer the soft landing surface required.

If that’s the case with one of your fall zones, you can cover it with new material if you have the vertical room, or you may have to dig it out and replace it with new material.

The other issue with any loose material (wood chips, EWF, sand, peastone) is that it migrates out of the area. In some cases, you might be able to rake it back in (if you can keep it clean), or you may have to add more.

## **Preserving Wood**

Most woods do not last long once exposed to the elements (that’s why houses are painted or stained), and especially not when they are in contact with the ground, or moisture from rain and irrigation. So whenever we think it will look or feel better, we use cedar (because the wood contains natural preservatives that resist decay to some degree), but cedar is expensive, so the other times we opt for fir, spruce, or pine that has been treated with a child-friendly preservative.

However, regardless of the wood used, and regardless of whether it’s been treated, it will still show signs of weathering, and over time wood will start to show signs. Cracking and checking are normal and not harmful, but when wood looks really dry, and begins to splinter, that’s when kids start getting hurt.

But there’s a very simple way to take care of this. Wood preservatives are just that: they help preserve the natural features of wood that make it so attractive to begin with, so we treat our products that use dimensioned lumber with a sealer before

they go out the door. However, sealers dissipate over time -- which is where you come in.

At least twice a year (more often depending on how severe your climate is) you will need to re-treat all the wood products on your Natural Playground. Of the non-toxic, kid-friendly products available to consumers, the one we find the easiest to use at an affordable price is Thompson's WaterSeal Advanced (water based) available through our store here: [www.naturalplaygroundsstore.com/template.php?query=Maintenance](http://www.naturalplaygroundsstore.com/template.php?query=Maintenance))

Thompson's WaterSeal (or similar) may be poured into an inexpensive garden sprayer to make your job easy. Pump up the sprayer, and walk around the Natural Playground spraying anything made out of dimensioned lumber - on all sides. The sprayer will make it easier to reach hard-to-get-at-places. Even though it's non-toxic, you should let it dry before allowing children to touch it.

If you're in an extreme heat/dry climate, this should be done at least 4 times a year, preferably more!!

The efforts required above may seem cumbersome, but if you make them routine, the benefits of such a maintenance program far outweighs the costs!  
Also, if you want to compare this to the maintenance required on equipment, there just isn't any comparison!

For one thing, the fall zones are smaller on natural playgrounds, so topping off or replacing fall zone material is far less expensive.

Secondly, most playground equipment has a life span of only 15 years, so if you spend \$50,000 on equipment this year, you'll spend \$50,000 replacing it every 15 years. If you amortize the cost of replacing equipment, each year you're spending \$3,300, which is less than you'd spend on the yearly routine maintenance program for your natural playground!