

# Q&A with Pamela Sherratt

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## Carrying capacity of an athletic field

**I** have recently received several questions along the lines of “How many games can a sports field host per year?” My answer to this question is, “Between 25 and 200, depending on your field.” The reason I answer this way is because each field is different, and the field is only as good as the care it receives. In essence, fields with no investment will deteriorate quickly, while fields that are supported by the community and taken care of by a turf professional may host 200+ games. Reading the stories about facilities that have received STMA’s Field of the Year Awards are a testament to the notion that high quality is achieved through education, craftsmanship, and available resources.

Breaking down the question about the carrying capacity of a field, the most important factor to evaluate is the drainage capability of the field. Since the 1970’s, when sports turf drainage systems were introduced, the quality of fields has significantly improved if a drainage system is installed. Improving the drainage of a field results in fewer cancelled games, better playing conditions, greater tolerance of high intensity use and therefore greater carrying capacity. The dustbowls and mudbaths of those early years are now considered unacceptable and customers expect fields that are playable (firm), aesthetically pleasing (have 100% grass cover) and are safe (even). Those three criteria: firmness, ground cover and surface evenness are the benchmarks for what constitutes a “high quality” athletic field and they are achieved by having a field that drains.

Increasing carrying capacity then goes hand-in-hand with improving field drainage. The most cost efficient drainage option is to adopt a rigorous, annual soil cultivation and sand topdressing program, which may or may not be done

in conjunction with sand slit installation every 4-5 years. This operation can significantly improve the carrying capacity of a native soil field and is a common practice at schools and parks facilities. The cost of this operation is several thousand dollars per field/year, but these types of fields can last decades and should be able to host upward of 70-100 events. It is important on topdressed and sand-slit fields that the topdressing is carried out annually, to prevent layering.

More effective and expensive options to improve drainage would include field reconstruction. Construction of a graded and seeded native soil field ranges in cost from \$60,000 to \$400,000, depending on whether the on-site native soil is used, or if sand is imported to ameliorate the soil. Sand cap systems range in cost from \$60,000-\$600,000 (Michigan State’s Spartan Cap System is estimated at \$60,000-\$100,000, for example), and suspended water table constructions, referred to as sand fields, range from \$600,000-\$1,000,000. The upper range of these costs may cover extra items like irrigation, lights and scoreboards. Similar to the upgraded drainage approach, annual maintenance practices like topdressing and organic matter control are also going to dictate the longevity of each field.

In addition to its drainage capabilities, there are many other criteria that dictate the carrying capacity of a field. Fields that are maintained by turfgrass professionals will obviously be produced to a higher quality standard than fields that are not. Turfgrass professionals have the craftsmanship and the knowledge to make informed decisions about turf maintenance, pest control, water and nutritional needs, and soil improvement. Community investment is also critical, since the turf manager needs both money and support to do their job.

At the local park where my kids play

soccer, zero dollars from funds raised by leagues are returned for field maintenance. As such, the field are covered with prostrate knotweed and ankle-sized craters, but until the community speaks up those improvements won’t get made. Intensity of use plays a big part in field longevity, since it will affect how quickly the ground cover is worn away and how much renovation time the sports turf manager has. Ideally, fields and practice locations should be rotated to allow for turf renovation, but small facilities or land locked facilities may not have that option. One of the worst scenarios I see is fields with multi-purpose soccer and football goals set in concrete, which thwarts any kind of renovation plan. Lastly, age of the athlete can also play a role; younger users typically cause less wear than older athletes.

So to summarize, the question “How many games can a field host?” is far too broad in nature for me to reply with one number. Carrying capacity and longevity of an athletic field depends upon its quality, and its quality depends upon the level of investment from the community and the knowledge of the person taking care of it.

This leads me into a story. Several years ago, before I was enslaved by my iPhone, I bought a phone from a big-box store. It was a great deal and didn’t bind me to any one service carrier. After my excitement of the deal wore off I quickly learned that both the quality of the product and the customer service that followed were beyond terrible. The phone was made with cheap plastic and every attempt to talk to someone about it resulted in me banging said phone on my head. Later, complaining about this experience to my friend and colleague Karl Danneberger, he cut me off mid-whine, looked at me wryly, and said, “Pam, you get what you pay for.” Truer words were never spoken. **ST**