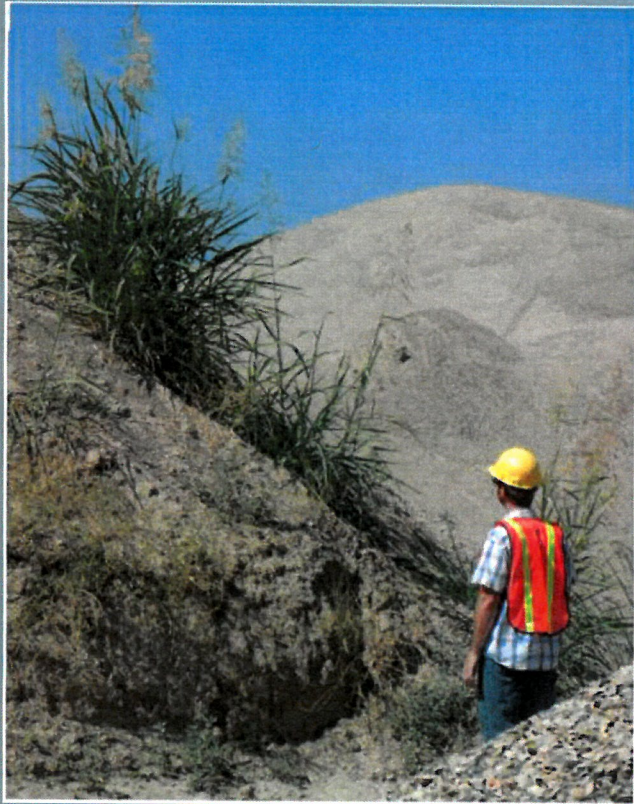


WEED FREE GRAVEL AND MULCH

An Introduction



Johnson grass, NPS photo

- Non-native invasive plants displace native plants and crops, deplete water, increase wildfire severity and frequency, decrease visibility along right-of-ways, degrade pastures, decrease timber yields, degrade wildlife habitat, and inhibit recreation. Land managers control invasive plants to reduce the environmental and economic damage that invasive plants cause. Treating invasive plants over a large area is expensive and often impossible. However, prevention of invasive plant introduction and establishment is the most cost-effective alternative. Aggregate quarries are high quality habitat for invasive plants and are the source for many invasive plant infestations, especially in transportation corridors and construction sites.

When contaminated aggregate is used, invasive plant propagules transplant from one high quality disturbed habitat to the next. Land managers can save thousands of dollars on treatment by preventing the introduction of invasive plants by buying weed-free aggregate. Weed-free aggregate is material purchased from a quarry that has been inspected and certified weed-free. An inspector examines the quarry to determine the likelihood that saleable material leaving the quarry does not contain invasive plant propagules. Upon successful inspection, the inspector issues a weed-free aggregate certificate.





Klamath NF-- Dyers Woad on Gravel. USFS Photo

- Currently, Washington does not have a statewide inspection program although several neighboring counties inspect and certify pits for the forest service and several private land managers and issue weed free certificates. These certificates are shared between land managers. As more land managers join the program, it reduces the cost of inspections. Additionally, the certificate increases product visibility and demand and becomes a marketable tool that highlights the “value-added” to the product. The demand for weed-free aggregate will increase as land managers realize the cost-savings of purchasing weed-free aggregate as opposed to incurring the cost of treatment.

The voluntary collaboration of land management agencies and quarries creates a market driven solution to invasive plant management problems. Quarries have financial incentive to participate in an inspection program, but they may not have the financial resources or knowledge base to develop an effective invasive plant abatement program. Therefore, the inspector serves dual roles as both inspector and educator. The success of this program hinges on the collaboration between inspectors and quarry managers to develop an integrated pest management program for each quarry. Inspectors work with quarry managers to develop invasive plant identification skills and provide educational materials to guide managers to develop a successful program.



CASE STUDIES

- At Great Smoky Mountains National Park in Tennessee, park staff began suspecting aggregate as an invasive plant source after seeing weedy white sweet clover and coltsfoot growing out of stockpiled winter sand. The winter sand was used on the highway and the next year new infestations of white sweet clover and coltsfoot were found scattered along miles of highway.
- Land managers discovered the highly invasive plant, dyers woad, growing along five miles of road in Klamath National Forest in northern California. Staff manually treated the infestation, but it continues to spread despite all efforts.
- Aggregate from gravel pit infested with black henbane was used to resurface a road in Sublette County, Wyoming on natural gas field roads. New henbane infestations soon popped up along the roads and spread through the region.
- Staff at Golden Spike National Historic Site in Utah, noticed new infestations of dyer's woad growing along miles of railroad grade after the park accidentally imported contaminated gravel to shore up the railroad grade. They had to bring in a specialized National Park Service invasive plant treatment team to treat the problem.
- Emergency repairs for several miles of roadway required the import of fill dirt to stabilize the road edge, after a large flood in Yosemite National Park washed away the road. The fill dirt was contaminated, and the following season many new invasive plant infestations sprung up. Yosemite spent hundreds of thousands of dollars to clean up the worst of the most invasive plant species, but many of the highly flammable annual grasses and other invasive plants remain today.

Sublette County (WY), Great Smoky Mountain National Park (TN), and Yosemite National Park (CA) now inspect aggregate before importing it to prevent paying for the costly treatments that followed these simple mishaps. Agencies across the West have instituted gravel pit inspections in the past fifteen years. The North American Weed Management Association (NAWMA) developed inspections standards in 2007. NAISMA has supported invasive species management professionals through trainings, standards, outreach and networking since 1994.



FREQUENTLY ASKED QUESTIONS

- **What is certified weed-free gravel?** It is gravel, sand, rock or top soil that has been mined and provided from a pit that is free of any viable plants of any of the weed species listed on either Washington's or the Federal Noxious Weed Lists.
- **Why are quarries weedy?** Quarries are highly disturbed areas due to the nature of the site. Disturbed areas are ideal habitat for many invasive plants.
- **Why should we use weed-free aggregate?** Invasive plant prevention is the single most cost-effective alternative to treating noxious plants. Contaminated aggregate used in road construction/ maintenance is a primary vector for invasive plant spread. When contaminated gravel is used, the infestations can extend for miles.
- **Why should we join the weed-free aggregate program?** An agreement between land management agencies and companies to purchase weed-free aggregate creates a market driven solution to invasive plant prevention problems. A shared program between land managers and suppliers strengthens product visibility and demand, thereby indirectly boosting financial incentive for suppliers to participate.
- **How do invasive plants transport to my project site?** Invasive plant seeds blow around the quarry and land on recently mined material. The contaminated aggregate is then directly transplanted at the project site into another disturbed area. Invasive plant seeds and propagules can also be transported around on equipment and vehicles.
- **Is weed-free aggregate actually weed free?** No. There is no guarantee that weed-free aggregate is actually weed free. This program greatly reduces the probability of contaminated aggregate being imported by working with quarry operators to identify and treat invasive plants. Inspectors work with quarry operators to manage invasive plants, and to manage stockpiles to reduce risk of contamination.

FREQUENTLY ASKED QUESTIONS

- **Can federal agencies preferentially purchase weed-free aggregate?** Yes. Federal agencies can preferentially purchase products that reduce the probability of spread of invasive plants if the agency deems the benefit of purchasing weed-free material reduces the probability of the spread of invasive plants, even if weed-free aggregate is not the lowest bid. (Clinton Executive Order 13112).
- **Are some materials weedier than others?** Yes. Some materials are more likely to have invasive plants than others. The more processed a material is, the less likely it will have invasive plant seed. Processing may sort, crush, heat or encase invasive plant seed. Material is listed from most likely to least likely to have invasive plant seed.

- Soil •River rock, cobble, uncrushed material •Crushed river rock •Crushed bedrock •Concrete •Asphalt

Are some quarries weedier than others? Bedrock quarries tend to be less weedy than quarries mining loose material, like in flood plains. Often in flood plains, the water table is close to the surface and so quarry operators must keep moving the active pit after hitting water. This increases the size of the pit and increases the amount of invasive plant habitat. Bedrock quarries tend to have a much smaller footprint and therefore often less weedy.

What areas in the quarry are most likely to have invasive plants actively growing?

- Access roads •Perimeter •Stock piles •Standing water •Overburden storage •Equipment and vehicle parking

What fee does the Washington Department of Agriculture charge for inspections? \$62.50/hr plus mileage.

THANK
YOU!

