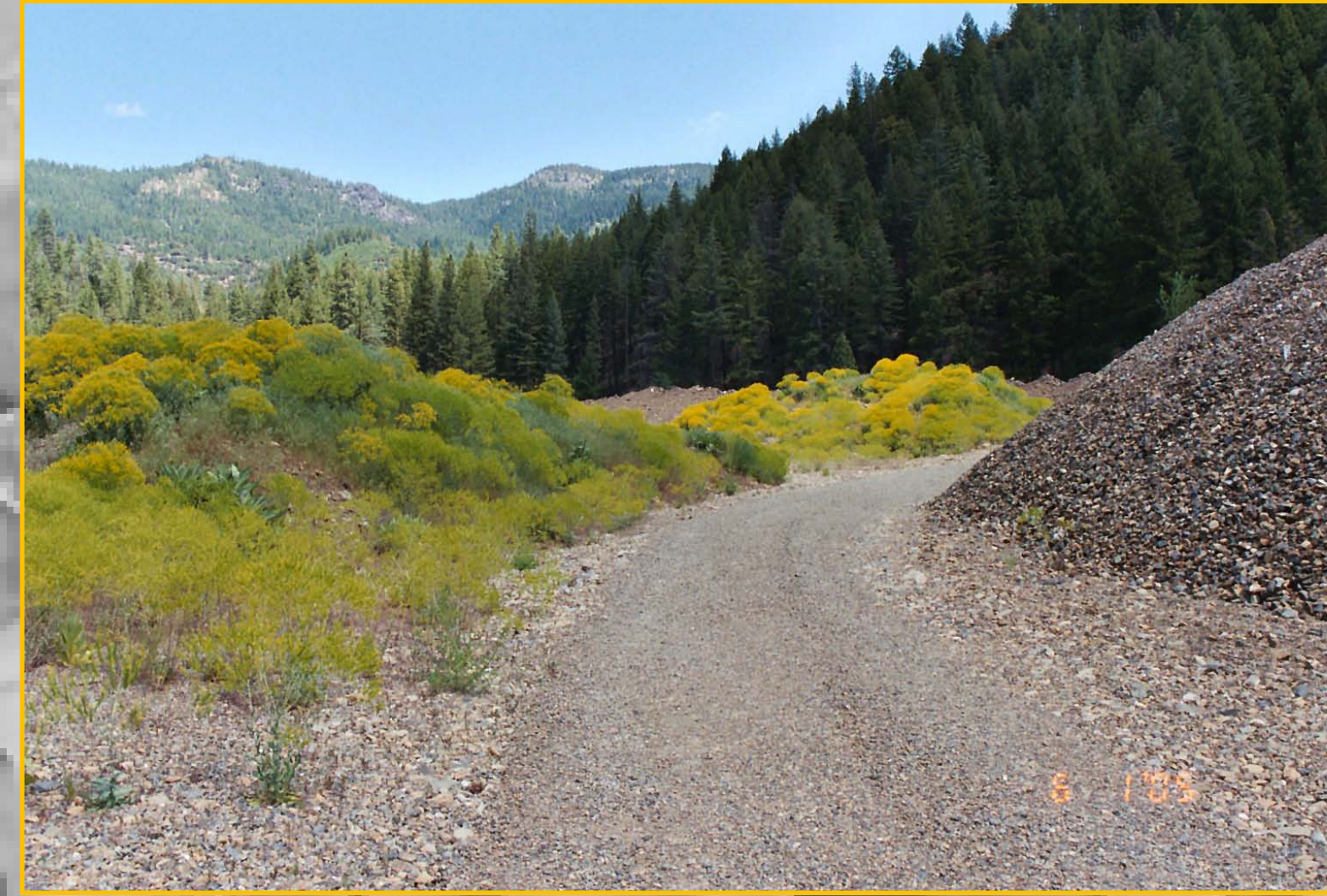




Preventing new invasions through sand and gravel quarry inspections:

Developing a Weed-Free Certification Program

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Introduction

Yosemite National Park (YOSE) protects one of the most pristine tracts of wilderness in the Sierra Nevada. Over 95% of the park's 750,000 acres is designated wilderness. With nearly 4 million visitors per year, infrastructure maintenance requires imports of some 15,000 tons of sand, gravel and fill annually. YOSE does not operate its own quarries, all mineral materials are purchased from external sources.

In 1998, contaminated shouldering material was imported for road construction in Yosemite. During the next growing season, countless new infestations of a variety of species sprung up along miles of roadway in the park. The infestation took hundreds of thousands of dollars to clean up, and the treatment of many low priority species was abandoned. Preventing a repeat occurrence of such an introduction event is a high priority, particularly because herbicide use in the park is limited.

While counties have the legal framework to regulate noxious weed infested properties, quarries are susceptible to invasion and are frequently encumbered with infestations of noxious and other invasive exotic weeds. Land managers therefore must remain vigilant. YOSE is conducting pre-purchase source inspections to limit the risk, but such inspections only work well during the late spring and early summer, hence they need to be planned in advance. Because of urgent unforeseen material needs, contracting or fiscal year deadlines, weed inspections are often neglected, or conducted under stressful and compromising conditions. A certification program would identify weed-free quarries ahead of time. The program will be in compliance with the national standards for weed-free gravel as developed by the North American Weed Management Association (NAWMA).

Methods

Yosemite is adapting the approach of successful programs in the Lake Tahoe basin, Glacier National Park, and the greater Yellowstone area to suit local conditions, and specifically targets:

SUPPLIER AWARENESS: "mineral material mishaps" are common and widespread, hence, improving supplier awareness is an essential first step.

BUYER AWARENESS: pre-purchase source site visits are the only way to ensure material is weed-free. Such visits also improve supplier awareness, relationships, and build marketplace incentive.

THREAT MITIGATION: Weed workers can provide a valuable service to suppliers by providing botanical expertise necessary to recognize risks & by providing recommendations of how to mitigate weed problems effectively, this is done during the site visits.

CERTIFICATION: Quarries that are regularly inspected and have an effective weed management plan, should get recognized via a marketable certificate .

Results/Lessons learned

Pre-purchase weed inspections of source quarries have provided confidence that our mineral material purchases are free of invasive weeds. Small local quarries typically readily address weed problems following site visit recommendations. Whether the same is true for large quarries, for which Yosemite is a insignificant customer, remains to be seen. Some outfits have excellent within-quarry processing systems, but the weed-free perimeter around the operation is very small. YOSE inspectors permit such materials to be used under asphalt, but not for exposed applications.

Paving the road for weed-free sand and gravel

The long term success of the program hinges on the support from agencies and groups that procure large volumes of mineral materials. Similar programs should be developed and adopted in other areas in California. We are planning to make our program documents and experiences available to support other projects.

Weed management groups can help by providing expertise and advice. Set up a tour to a local quarry, and help them with weed ID and treatment recommendations. Some operators simply have given up because of treatment failures (often due to dust binding glyphosate).

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