Green Solutions to Abandoned Mines
Reclaiming the Sierra
Green $olutions
to Abandoned Mines

an initiative of
The Sierra Fund
A Call to Action

• green solutions to remediating California’s abandoned mines

• blueprint for business, government, and community leaders
“green solutions to abandoned mines”

define and incentivize adoption of environmentally sound & economically viable practices
to remediate abandoned mine scarred lands including abandoned mines and mine tailings
“green solution products”

Created by remediation of abandoned mine problems, such as physical hazards, acid mine drainage and mercury entrained sediments in reservoirs; and

recovery of marketable materials including gravel, sand and gold
Map of Abandoned Mines in California

California Department of Conservation
2007
Gold Mines in the Sierra Nevada Conservancy Region

California Department of Toxic Substances Control 2012
Impacts of Abandoned Mines

Malakoff Diggin’s
1880’s
USGS photo
The Sierra Fund’s

Mining’s Toxic Legacy

An Initiative to Address Mining Toxins in the Sierra Nevada

Published 2008
Impacts of the Gold Rush:

- Cultural
- Health
- Environmental
Obstacles to Abandoned Mine Clean-up

1. Public Health Impacts Need Documentation

2. Regulations Inconsistent and Confusing

3. Liability Associated With Abandoned Mine Drainage

4. Proper Closure and Reclamation of Active Mines is Difficult
Obstacles to Abandoned Mine Clean-up

Public Health Impacts Need Documentation

Tested soils on public recreational trails that traverse abandoned mines. Found some sites required further assessment.

Published 2010
Abandoned Mine Clean-up

Obstacles to

Public Health Impacts Need Documentation

* interviewed 150 anglers fishing on 303 (D) listed water bodies
Regulations Inconsistent and Confusing

- many regulatory agencies with authority over mine remediation
- agencies use different methods for assessing a mine
- different remediation standards enforced
Agencies with a Role in Mine Remediation and Reclamation

- Cities & Counties
- Department of Conservation, Office of Mine Reclamation
- Department of Conservation, Abandoned Mine Lands Unit
- State Mining and Geology Board
- State Water Resources Control Board
- Regional Water Boards
- Department of Toxic Substances Control
- US Forest Service
- US Bureau of Land Management
- US Environmental Protection Agency

Other agencies with a role: California Fish and Game, Air Districts, California Air Resource Control Board, US Army Corps of Engineers, US Fish & Wildlife Service, and California Department of Public Health
Obstacles to Abandoned Mine Clean-up

Liability Associated With Abandoned Mine Drainage
Proper Closure and Reclamation of Active Mines is Difficult

Vested Rights on a legal non-conforming use

Antiquated reclamation Plans

Counties and cities lack resources & training

Enforcement is difficult
Solution:

Promote Green Solutions to Abandoned Mines
Step One:

Reach out to Community where project is proposed
Green Solution Strategies

A) Identify, evaluate and require scientifically proven methods for remediating abandoned mine scarred lands and eliminating associated human health and environmental hazard.

B) Create incentives for remediating abandoned mine lands when a “responsible party” cannot be found.

C) Develop sources of financial support for abandoned mine land remediation when a “responsible party” cannot be found.

D) Remediation with Benefits: Stimulate and organize consumer demand for “green solution” mining products
Green Solution Strategies

A) Identify, evaluate and require scientifically proven methods for remediating abandoned mine scarred lands and eliminating associated human health and environmental hazard.

- need to address a variety of heavy metals and sites
- requires understanding mining practices and the waste they produce
- regulators should facilitate permitting for pilot projects
- ensure transparency of the methods and allow quick adoption of what works
Green Solution Strategies

B) Create incentives for remediating abandoned mine lands when a “responsible party” cannot be found.

- harmonize state and federal regulations
- consistent and understandable remediation options
- Brownfields programs need to be significantly expanded
Green Solution Strategies

C) Develop sources of financial support for abandoned mine land remediation when a “responsible party” cannot be found.

I. Modernize fees for mining and apply to remediation of abandoned mines

i. Increase fees for mining on federal land
ii. Increase the California Fee on Gold
iii. Establish fees for all products mined in the state and apply income to remediation activities

II. Downstream water consumers pay for upstream remediation activities
Green Solution Strategies

D) Remediation with Benefits: Stimulate and organize consumer demand for “green solution” mining products

I. Different kinds of abandoned mines and mine scarred lands have the potential to develop and sell varying sorts of “green solution” products

II. Marketing “green solution” products
   i. Green Gravel
   ii. Green Gold
   iii. Green manufactured products
Abandoned Mine Remediation and Job Creation

- Cleaning up abandoned mines will create local green jobs.

- Success at creating jobs while remediating abandoned mines will depend on the revenue source.
Four Questions

How can local, state and governmental agencies most effectively coordinate their activities to encourage green solutions to abandoned mines?

Should green solutions be enforced by government agencies, or should the market create and enforce marketing of green solution products?

How can consumer demand for green solutions products be built?

What should the top priorities be for a campaign to stimulate green solutions to abandoned mines? What is the timelines for these activities?