



Kauai's 2006 Ka Loko Dam
failure and its lasting
impact on Hawaii



John Wehrheim, Founder, Pacific Hydro
Kevin L. Gooding, C.P.G., Senior Hydrogeologist, INTERA

- 
- Built in 1890
 - 27 to 40 feet high
 - 1400 acre-feet max storage
 - 915 feet long
 - Owned by Mary Lucas Trust and Pflueger Properties

Historic Uses

An aerial photograph showing a landscape with various features. In the foreground, there are several rectangular agricultural plots, some of which appear to be terraced or have distinct patterns. To the right, there is a large, dark, irregularly shaped pond. In the background, a mountain range with distinct ridges and valleys is visible. The overall terrain is rugged and appears to be a mix of natural and human-modified land.

Sugar

Hydro power

Prawns

Papayas

Fishing

Diversified ag

Recreation

Ka Loko



“40 Days of Rain”

The two weeks prior to failure Kauai received 66.36 inches at Waialeale.

Dam failed just before dawn
March 14, 2006



7 Dead

300 to 400 million gallons discharged

Peak flow 27,200 CFS

KA LOKO DAM BREACH VICTIMS



**Aurora Fehring,
Rowan Fehring-
Dingwall
and Alan Dingwall**



**Christina
McNeas**



**Daniel
Arroyo**



**Timothy
Noonan**



**Wayne
Rotstein**

Independent report concludes that the most likely cause of failure was overtopping from the removal or filling of the spillway.



An aerial photograph of a reservoir surrounded by dense green forest. A red arrow points to a specific area on the upper right bank, labeled as the spillway. The water in the reservoir is dark blue, and the surrounding land is covered in lush green trees and vegetation. A large, reddish-brown patch of earth is visible on the bank near the spillway area.

Spillway

1982



1987 Pflueger acquires reservoir

1998 Spillway filled—Pflueger warned

2001 Continued Illegal grading

2005 -2006 grading penalties

March 14, 2006 – 7 dead

Spillway filled



Pflueger denies alleged dam work

He also says he never saw a concrete spillway at Ka Loko Dam, as others have attested*

By Tom Finnegan
tfinnegan@starbulletin.com

KILAUEA, Kauai » Dam owner James Pflueger is tired of being portrayed as a killer. And he says he wants to set the record straight: He never touched the Ka Loko Dam and had nothing to do with the breach that killed seven people.

"What you see is what you see," Pflueger said. "The (only) work I did was on the other side" of the reservoir.

In an interview with the Star-Bulletin yesterday, the former auto dealer said Ka Loko did not have a concrete spillway and he denied allegations that he covered up the safety feature.

"If the cement (spillway) is there, go find it," he said.

Pflueger's Kauai property manager, Gordon Rosa, went one step further. Rosa blamed both Tom Hitch, owner of Kilauea Irrigation Co., and the state Department of Land and Natural Resources for



FL MORRIS / FMORRIS@STARBULLETIN.COM
James Pflueger, right, was at the county building in Lihue earlier this month with Gordon Rosa, his Kauai property manager.

For years the community and local government knew of Pflueger's illegal grading near the ocean as well as in the mountains.



Uncle Jimmy!



No consequences for key politician in Kauai tragedy

By Malia Zimmerman - October 17, 2014



Pflueger sentenced to seven months

Wednesday, October 15, 2014
Tom LaVenture The Garden Island



LIHUE — James Pflueger was sentenced to seven months in jail and five years probation on Wednesday for his role in the 2006 Ka Loko dam failure that killed seven people.
The 88-year-old retired auto dealer was sentenced in 5th Circuit Court before Chief Judge Randal Valenciano.

Pflueger fined \$4 million by state

Posted: Saturday, July 2, 2005 12:00 am
By Lester Chang - The Garden Island



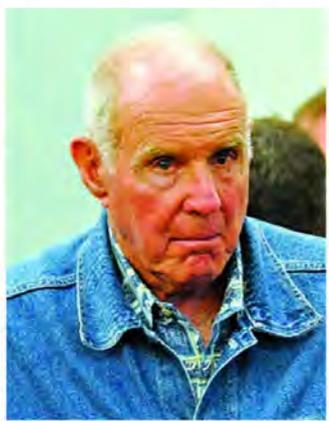
Members of the state Board of Land and Natural Resources have fined North Shore landowner and one-time car magnate James Pflueger \$4 million for his role in the North Shore in November

Total Ka Loko civil settlement amount is set at \$25.4 million

Wednesday, January 20, 2010 11:45 pm
Paul C. Curtis - The Garden Island

Pflueger indicted for tax fraud

Ka Loko Dam owner could face up to 5 years in prison



Posted: Wednesday, October 15, 2014
Léo Azambuja
LIHUE — A federal grand jury indicted James Pflueger and his son Charles Alan Pflueger on charges of tax fraud related to the Ka Loko Dam. The indictment also charges the pair with obstructing the investigation and conspiracy to defraud.

Pflueger is fined more than \$7.8M

Environmentalists acclaim the ruling as a success for community activism

By Diana Leone
dleone@starbulletin.com

"Alan Pflueger is a man of integrity. We're doing the investigation and we will vigorously defend him," Charles Alan Pflueger's attorney David Scheper said in a statement.
Charles Alan Pflueger, identified as the owner of Pflueger Inc., James Pflueger and Kam are also charged with filing false federal individual tax returns for the past two to three years.

Wealth, Power, Influence Keep Pflueger Trial for Kauai Dam Breach Death Reportedly in the Works

By Malia Zimmerman - September 7, 2012



Pflueger sends inflammatory letter to victim of Kauai dam breach

By Malia Zimmerman - October 14, 2014

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Pflueger drives wide emotions on Kauai

By Tom Finnegan
tfinnegan@starbulletin.com

Community groups file lawsuit against Pflueger

By Helen A. Halton

Friday, June 28, 2002



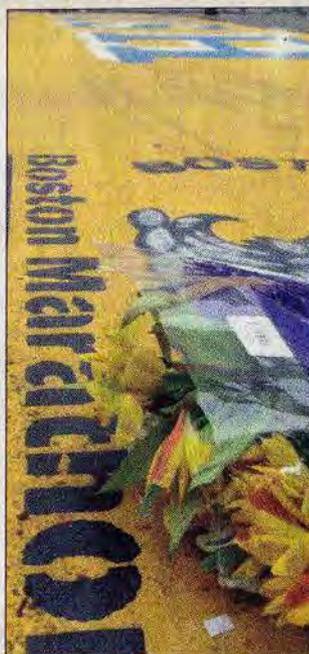
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PFLUEGER SENTENCE COMPLETED

Kilauea property owner punished for 2006 dam burst

Brittany Lyte
THE GARDEN ISLAND

LIHUE — The Kilauea property owner who was convicted for his role in the Ka Loko Dam break that killed seven people is now a free man.

James Pflueger completed seven months of home confinement on May 10, KHON2 reports.

The former Honolulu car dealer's newfound freedom comes with a five year probation sentence.

"I don't have anything to say," Pflueger, who is 90, told *The Garden Island* by phone Friday afternoon. "The court ruled I killed seven people. What else is there to say?"

"I'm a happy man. I can see with my eyes, I can eat with my own teeth. I'm a very happy man," he added. "The deal was good for me. It's a beautiful day."

Pflueger pleaded no contest in July 2013 to a charge



Pflueger

of first-degree reckless endangerment in the deaths of the victims who were drowned in 2006 when a dam on his 33-acre Kilauea property burst, unleashing a wall of water that swept them out to sea. The state had accused Pflueger of causing the breach by tampering with the dam's spillway.

His company, Pacific 808 Properties, took responsibility

for seven counts of manslaughter in a second case, resulting in a \$350,000 fine and felony probation.

Pflueger was sentenced to seven months in jail on Oct. 15. He had served six weeks of his sentence when he was placed on home detention due to health complications. His reported medical history includes heart problems, cancer and arthritis.

While under house arrest, he was permitted to leave his property only for doctors visits.

Tom Hitch, whose com-

pany Kilauea Irrigation Co. owns an 18-inch pipeline that delivers water from the Ka Loko Reservoir to nearby farms, said Friday in a prepared statement that he is grateful Pflueger was convicted.

"I told Pflueger his filling in of the spillway was dangerous and he told me to mind my own business," said Hitch.

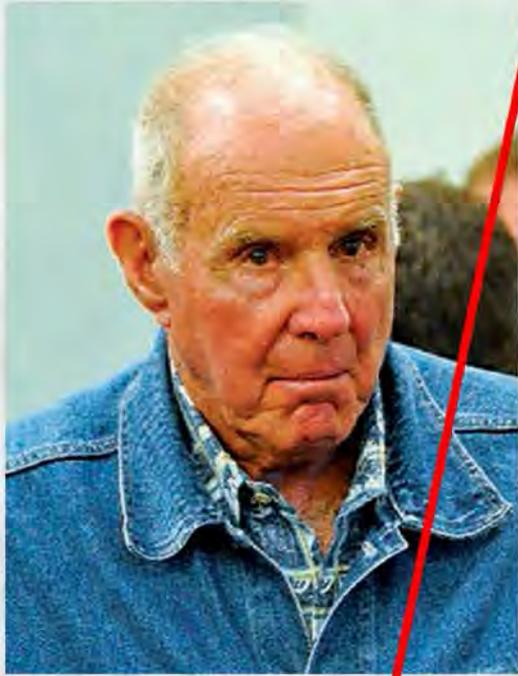
Ka Loko is the fifth largest reservoir in the state. The dam, built in 1890, was part of Kilauea Sugar Company's irrigation system. In later years it

provided Kilauea farmers with water for their land.

On March 14, 2006, an estimated 420 million gallons of water burst out of the dam, washing away seven people — a husband, wife and their two-year-old toddler; an engaged couple; a carpenter; and a property caretaker.

Only three bodies were found.

In the lawsuit, the victims' families said eight people were killed, not seven, because one of the victims was pregnant.



PFLUEGER

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Pflueger was guilty – but government was also responsible:

- The State inadequately funded its dam inspection program neglecting required safety inspections.
- The Army Corps classified Ka Loko as “low hazard”. It wasn’t.
- A 1997 Notice of Grading Violation at Ka Loko was not enforced by the County.
- State and County inspectors reported no defects for years after the spillway had been filled.

Short and Long Term Impacts



An aerial photograph showing a house with a white corrugated metal roof and solar panels. The house is surrounded by floodwaters and debris, including fallen trees and branches. The water is muddy brown. The house has a curved facade with large windows. The solar panels are mounted on the roof, and there are some electrical components nearby. The surrounding area is a mix of green grass and brown mud, with many trees and branches scattered around, indicating significant damage from a natural disaster.

LOSSES:

- Lives
- Homes
- Farms
- Orchards
- Landscaping
- Irrigations Systems
- Roads
- Bridges
- Utilities

- FAITH AND TRUST IN GOVERNMENT



2 homes swept away



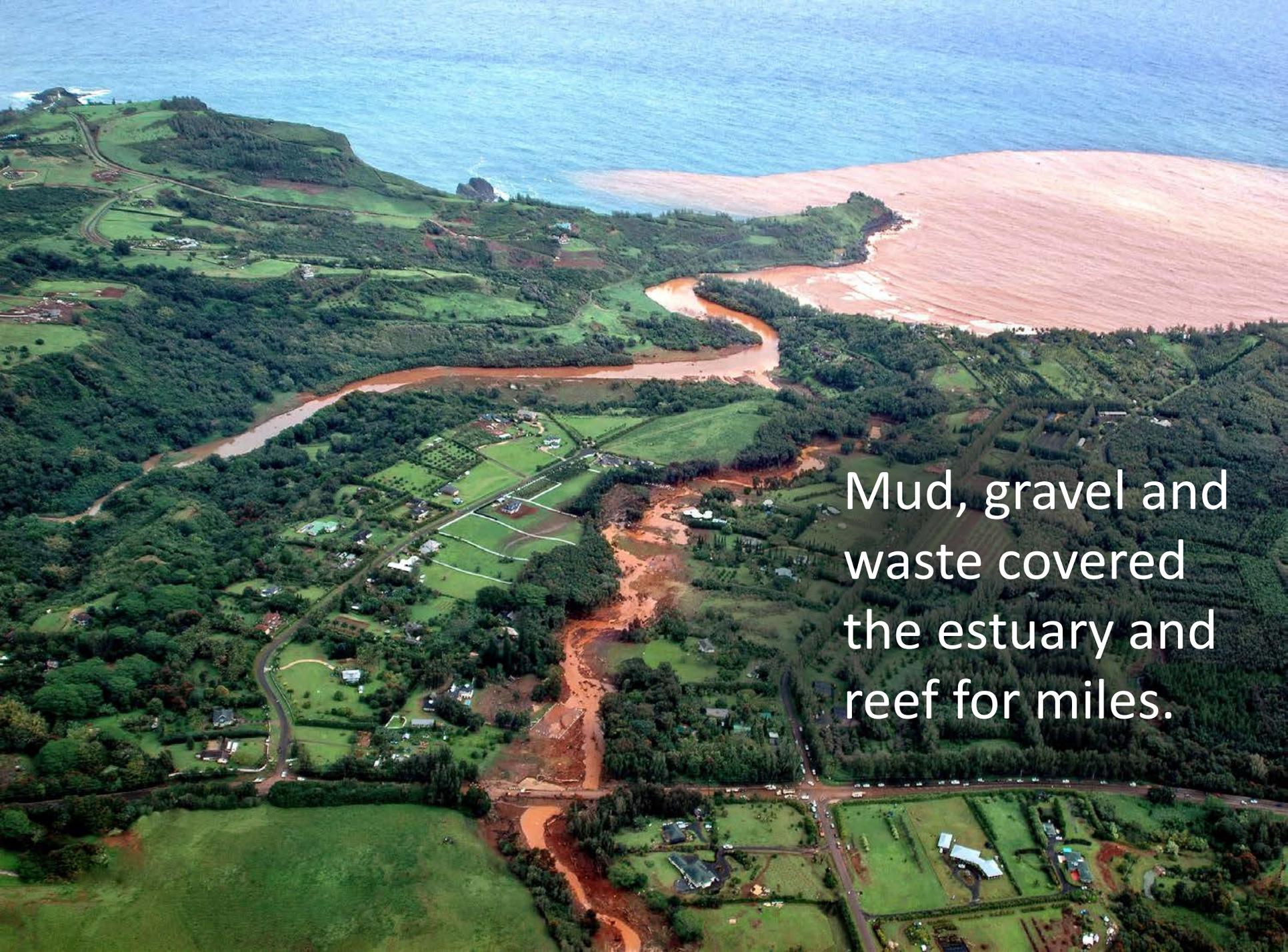
40 properties damaged

Morita, an irrigation reservoir
downstream of Ka Loko,
heavily damaged and not
feasible to repair.



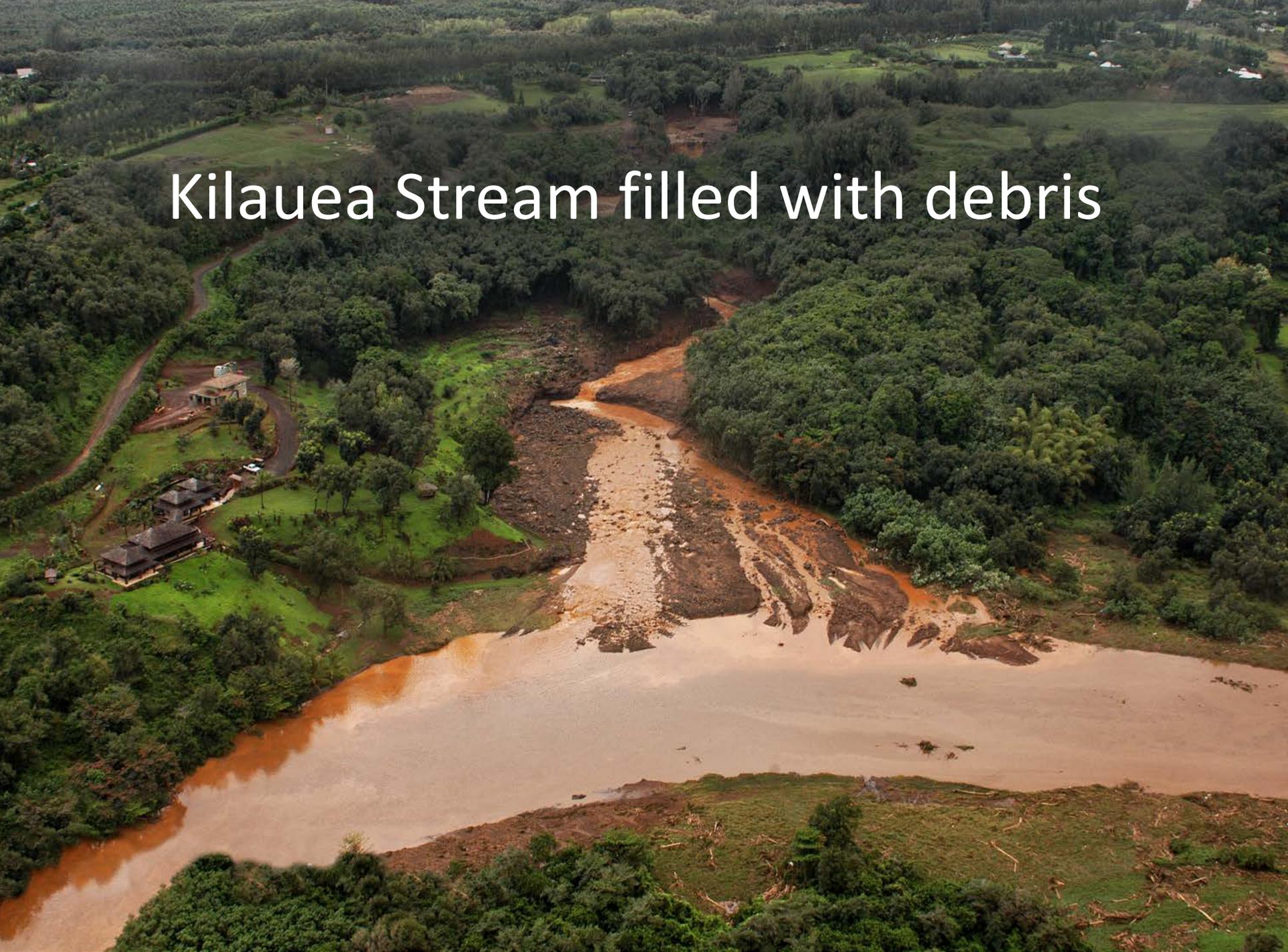
Environmental Impacts





Mud, gravel and waste covered the estuary and reef for miles.

Kilauea Stream filled with debris



Wailapa Stream Scoured Clean





Kilauea River, Wailapa Stream Clean-Up

By [Malia Zimmerman](#) - July 20, 2011



Increased Regulatory Oversight

- New Dam Safety Statute in 2007
- New Administrative Rules in 2010
- Rigorous inspection and permitting

More safety

Formal regulatory procedures

Legal protections

Higher Costs for O&M and Reconstruction

Higher Cost of Dam Ownership

- Construction and Repairs
- Permitting
- Liability & Insurance
- Difficulty of obtaining capital



**Collaborative
Leaders
Network**



Alexander Dam on Kauai

**HAWAII'S STORED WATER:
WHERE WE HAVE BEEN AND WHERE DO WE GO NEXT?**

December 2014

“Time is running out on many of Hawaii’s dams and reservoirs”

Collaborative Leaders Network

Threatened by:

- Regulation
- Lack of Funding
- Lack of leadership to preserve water storage facilities



Lessons:

- Fair and sufficiently funded government oversight is critical.
- However, the power of political and social influence cannot be overcome with ever-increasing regulation.
- Education and training is essential.
- Owners must be held responsible for their land.
- Complicit government officials must be prosecuted.

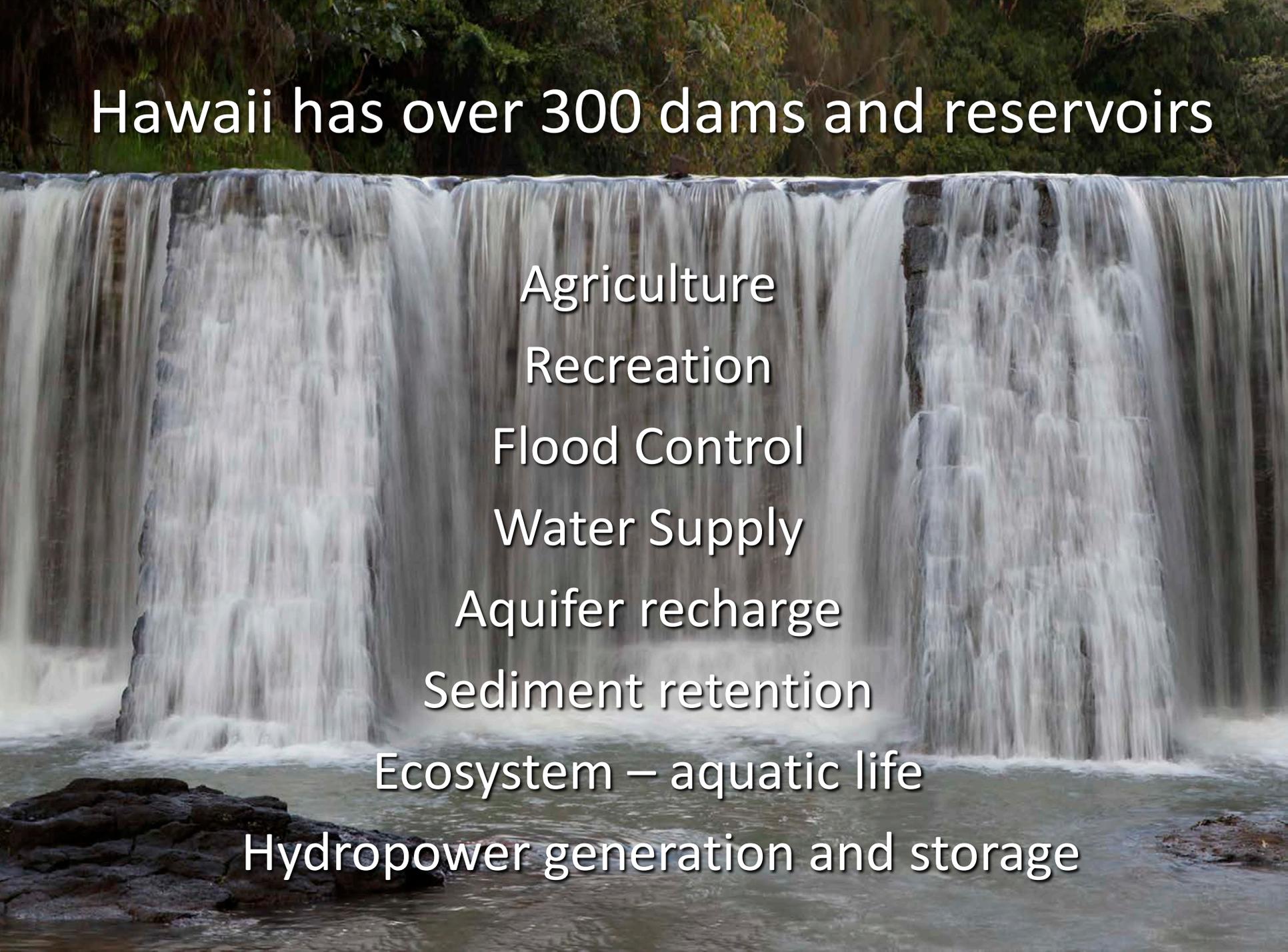
No consequences for key politician in Kauai tragedy



BY MALIA ZIMMERMAN – KILAUEA, KAUAI – Retired Auto Dealer Jimmy Pflueger was sentenced to 7 months in prison Wednesday, Oct. 15, 2014. He pleaded “no contest” to a Reckless Endangering charge filed against him by the state attorney in Nov. 2008 after his dam breached on March 14, 2006, killing 7 people.



Dams and reservoirs
are essential for our
economy



Hawaii has over 300 dams and reservoirs

Agriculture

Recreation

Flood Control

Water Supply

Aquifer recharge

Sediment retention

Ecosystem – aquatic life

Hydropower generation and storage



State of Hawaii

100% Renewable Power by 2045

1st US State to mandate 100% renewable goal



100% renewable energy is not a fantasy for someday, but a reality today.

2006
TRAGEDY
KALOKO



Many thanks to
Casey Riemer of
Jack Harter Helicopters
for the aerial photography