After the event: ecosystem recovery

The headline ends. The measurements should not.



Mount St. Helens, 20 August 2013; Landsat 8. Credit: NASA Earth Observatory/Jesse Allen and Robert Simmon, using USGS Landsat data.

Historical evidence. Better questions. Useful records.

Volcanic, wildfire and river-restoration examples reveal recovery as a sequence of changes rather than a single before-and-after photograph.

What the records reveal

SCOPE AND METHOD

Four selected case studies use satellite observations and NOAA restoration accounts. Habitat access, vegetation cover and population recovery remain separate outcomes. Dates are historical, not claims about conditions today.

A COMPARISON WORTH MAKING

Greener does not necessarily mean the original ecosystem has returned. An opened river does not prove fish populations have recovered. Track multiple outcomes against a documented baseline.

IMAGES AND UNCERTAINTY

Photographs and satellite views carry their original credits. Quantitative charts use cited values; conceptual diagrams are explicitly labeled and contain no invented measurements. AI assisted research and drafting; references were checked and limitations retained. A picture shows a place and moment; it does not prove an entire event boundary, impact or cause. This is a historical reference, not a live warning service.

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Mount St. Helens: vegetation returns

17 June 1984 and 20 August 2013 images | Mount St. Helens, Washington



Mount St. Helens, 20 August 2013; Landsat 8. Credit: NASA Earth Observatory/Jesse Allen and Robert Simmon, using USGS Landsat data.

Disturbance
18 May 1980 eruption

Image comparison
1984 / 2013

Sensors
Landsat 5 and Landsat 8

Visible indicator
Vegetation and landscape change

WHAT HAPPENED

NASA’s Landsat comparison shows vegetation returning to parts of the landscape affected by the 1980 eruption. Natural recolonization and management both belong in the story.

WHAT THE DATA REVEALS

Preserve intervention history and acquisition season. A greener image can reflect different processes in different parts of the same landscape.

READ WITH CARE

Vegetation color alone does not measure species diversity, ecosystem function or return to a pre-eruption condition.

Source 1 >

Visual / data >

Yellowstone: recovery is patchy

1987-2008 Landsat sequence; fires in 1988 | Western Yellowstone National Park



Western Yellowstone, 15 September 2008. False-color Landsat view. Credit: NASA/Robert Simmon, using USGS Landsat 5 data.

Disturbance
1988 wildfire season

Satellite record
Landsat 5

Image display
Visible plus infrared false color

Follow-up
Two decades after the fire

WHAT HAPPENED

NASA’s image sequence follows western Yellowstone before the 1988 fires and through 2008. Burn severity and subsequent vegetation change vary across the landscape.

WHAT THE DATA REVEALS

A fixed footprint and consistent image interpretation reveal patchiness that a park-wide summary can hide.

READ WITH CARE

False colors are chosen to highlight land-cover differences. A fading burn scar does not mean every ecological measure has returned to baseline.

Source 1 >

Visual / data >

Elwha: access restored, outcomes still measured

Dam removal, 2011-2014 | Elwha River, Washington



Dattle reference diagram; labels summarize the cited source. Not an event photograph or measured time series. Credit: Dattle; original graphic from the cited reference.

Dams removed
2

Habitat reopened
More than 70 miles

Follow-up indicators
Fish, habitat and food webs

Interpretation
Access is one recovery measure

WHAT HAPPENED

Removal of the Elwha and Glines Canyon dams reopened more than 70 miles of salmon habitat. NOAA and partners monitor fish populations, river processes and food-web responses.

WHAT THE DATA REVEALS

Record the intervention and the ecological response separately. A new migration route and a recovered population are related, but different, outcomes.

READ WITH CARE

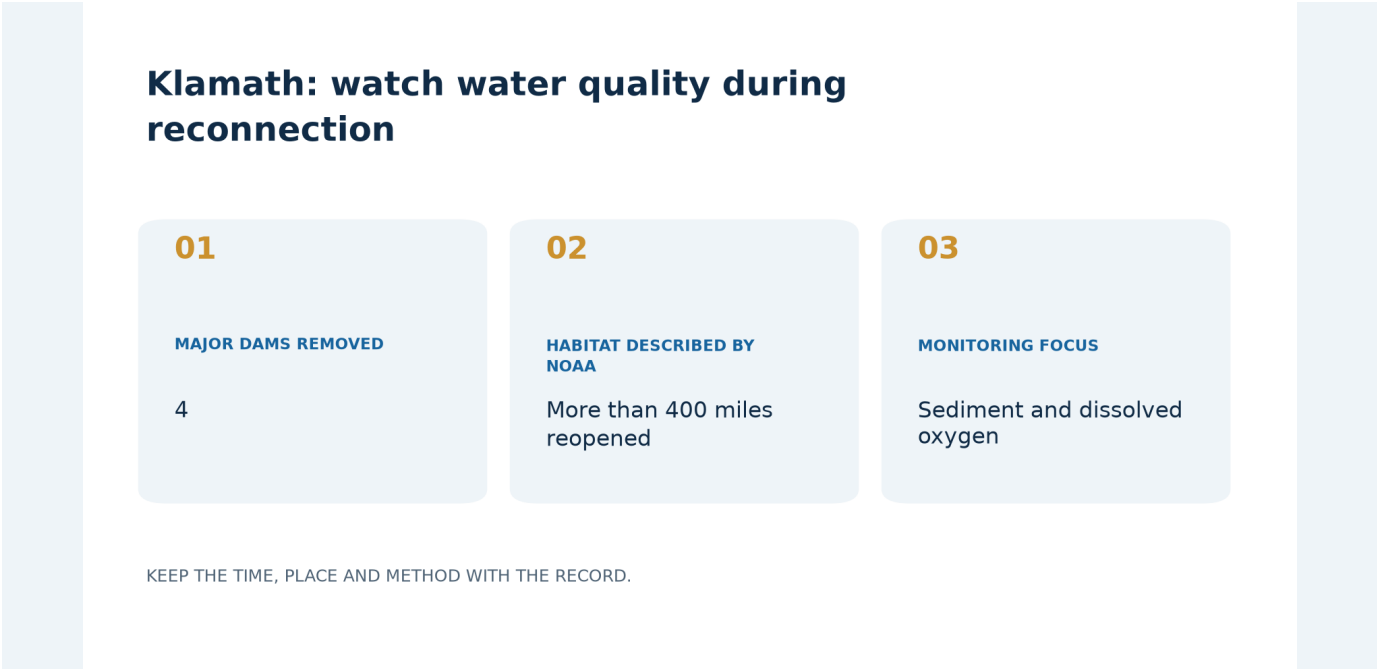
Reopened habitat is not a fish-abundance estimate. Sediment changes and differences among species complicate a simple before-and-after comparison.

Source 1 >

Visual / data >

Klamath: watch water quality during reconnection

Final removal steps reported 2 October 2024 | Klamath River, California-Oregon



Dattle reference diagram; labels summarize the cited source. Not an event photograph or measured time series. Credit: Dattle; original graphic from the cited reference.

Major dams removed
4

Habitat described by NOAA
More than 400 miles reopened

Monitoring focus
Sediment and dissolved oxygen

Follow-up need
Fish returns and habitat response

WHAT HAPPENED

NOAA described coordinated water-quality monitoring during the final Klamath dam-removal steps. Tribal, state and federal partners used observations to manage sediment-release impacts.

WHAT THE DATA REVEALS

A recovery notebook should capture conditions during the intervention as well as afterward. Turbidity and dissolved oxygen need separate measurements.

READ WITH CARE

Reconnection creates an opportunity for recovery; it does not prove that historical fish populations have returned. This record makes no new claim about salmon counts.

Source 1 > **Visual / data >**

From examples to observations

A USEFUL RECORD KEEPS ITS EVIDENCE

Keep the time, place, measurement method, unit, source and uncertainty with every observation. Separate what you saw from an estimate or interpretation. Repeat observations consistently, and retain the original evidence when updating a record.

SUGGESTED DATTLE FIELDS

- Disturbance or restoration date and site
- Baseline image and measurement method
- Repeat date and comparable season
- Vegetation, habitat or population indicator
- Management intervention and confounding factors
- Uncertainty, evidence link and next observation

AI AS AN ACCELERATOR

Use this prompt to draft a collection structure, then review it. AI can organize the questions and fields; it cannot supply missing observations or replace source verification.

> Create a Dattle for after the event: ecosystem recovery. Include Disturbance or restoration date and site, Baseline image and measurement method, Repeat date and comparable season, Vegetation, habitat or population indicator, Management intervention and confounding factors, Uncertainty, evidence link and next observation. Start with an empty collection. Separate observations, estimates and interpretations. Do not invent measurements, dates, locations or sources. Retain units, uncertainty and source links; flag missing information for review.

Explore Dattle at dattle.com. Availability, features and plan limits are described on the website.

Sources and image credits

Primary references checked November 12, 2026. Records and estimates can be revised. Every case page links to its evidence; full addresses are retained here for reuse.

01. Mount St. Helens: vegetation returns - primary reference
https://science.nasa.gov/earth/earth-observatory/life-reclaims-mount-st-helens-82151/

02. Yellowstone: recovery is patchy - primary reference
https://science.nasa.gov/earth/earth-observatory/yellowstone-recovers-from-1988-fires-39125/

03. Elwha: access restored, outcomes still measured - primary reference
https://www.fisheries.noaa.gov/west-coast/science-data/dam-removals-elwha-river

04. Klamath: watch water quality during reconnection - primary reference
https://www.fisheries.noaa.gov/feature-story/final-step-klamath-river-dam-removal-opens-path-returning-salmon