intel

June 2023

2022 Water Restoration Progress Report

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Introduction

Semiconductor fabrication is water intensive. By responsibly managing our water use, guided by our Global Water Policy, we can meet our business needs, as well as those of our communities. Our water strategy has three main objectives:

- **conserve** water used in our operations,
- **collaborate** on water initiatives with local communities, and
- **create** technology solutions to help others reinvent how they use and conserve water.

This report provides a summary of our watershed restoration efforts during 2022, including new projects funded and the amount of water restored for all projects funded to date. Information about our progress toward our overall net positive water goal and water conservation efforts within our operations can be found in our annual Corporate Responsibility report.

Our Net Positive Water Commitment

As a part of our corporate responsibility strategy, Intel has committed to achieve net positive water by 2030, through onsite water conservation efforts aimed at reducing our freshwater use, and funding watershed restoration projects that will restore more fresh water than we consume. This report summarizes the progress toward the commitment to restore more than 100% of our freshwater usage – a key component to achieving net positive water.

Project Selection Methodology

Intel considers a range of project types and evaluates them based on a set of criteria, including:

- Credible organization with proven project development record and capacity.
- Located in source watershed, tied to water supply, or connected to the local community.
- Feasible project timeline that includes project initiation and completion in the relative near-term.
- Potential for long-term or permanent benefit (i.e., able to deliver water benefit for multiple years) or short-term benefit (typically one year) that addresses a critical water challenge and aligns with our other project objectives.

Other criteria used to assess the overall value of projects include:

- Potential to catalyze and/or scale up water solutions
- Community and employee engagement
- Ability to leverage additional funding through matching grants or other sources
- Favorable project cost vs. benefit ratio

Benefit Quantification Approach

Intel's water restoration commitment is based on restoring a cumulative annual volume of water to the environment. The anticipated restore benefits are assessed by our external consultant, LimnoTech, for each project based on an estimated volume of water that is saved, protected, treated, or returned to the environment through funding and project implementation. Benefits are calculated and based on a comparison between a pre-project condition and the expected improved condition once the project is completed. Upon completion of each project, the restore benefit is quantified based on project results reported by implementing organizations. Restore water benefits are based on peer-reviewed quantification methodologies (Rozza et al., 2013) previously developed by LimnoTech in collaboration

with The Nature Conservancy (TNC) (LimnoTech, 2017), and documented by the World Resources Institute (WRI) (Reig et al., 2019). The restore water benefit indicator calculated and the quantification methodology applied varies by project type and depends on the project objectives, the activities implemented, and the information and data available to support the calculation. It is recognized that the estimated benefits have some uncertainty. To reduce this uncertainty, scientifically defensible methodologies and conservative assumptions are employed in the quantification process, in combination with available data and project information.

Consistent with the established quantification methodologies, restore water benefits are counted in the year the project is completed or partially completed if actual benefits are achieved during the year, and in each subsequent year, provided that the project is maintained and continues to function as intended. Ongoing project performance verification is provided to Intel annually by the implementing organizations. In situations where there are multiple project funders and Intel funds cover less than 100% of the project cost, the restore water benefit is adjusted to reflect the Intel-funded portion of the total project cost (i.e., cost share). For projects where investments were made before Intel's involvement (e.g., land acquisition), the total project cost is estimated based only on investments that pertain specifically to creating measurable water benefits achieved as a result of Intel's financial support of the project.

Water Restoration Progress in 2022

During 2022, we continued to fund water restoration projects benefiting the watersheds that we impact and the communities where we operate, including new projects benefitting Arizona, US and Guadalajara, Mexico.

In 2022, the projects that Intel has funded to date restored over 3 billion gallons of water to our local watersheds (see summary in Table 1). This is equivalent to approximately 107% [1] (by volume) of our freshwater withdrawals returned and restored to our communities through efficient water management, water reuse, and project funding that enabled water restoration in local watersheds. This enabled us to achieve net positive water in two countries – US and India.

Intel Location (by watershed)	Total Number of Projects Funded, to Date	Restore Benefit Achieved in 2022 (Million Gallons, MGY)
Arizona, USA	21	1,717
California, USA	3	64
New Mexico, USA	4	123
Oregon, USA	7	955
Texas, USA	1	0.2
Bangalore, India	2	108
Belen, Costa Rica	1	49
Guadalajara, Mexico	1	0
Leixlip, Ireland	1	0
Penang & Kulim, Malaysia	1	27
Global Total	**42**	**3,043**

Table 1. All water restoration projects funded through December 31, 2022.

Project Summaries

During 2022, Intel funded 4 new projects:

- Upper Colorado River Flow Enhancement – Colorado Water Trust, 533 MG volume benefit in 2022 only
- Yampa River Flow Restoration – Colorado Water Trust, 339 MG volume benefit in 2022 only
- Price River Instream Flow Protection – Trout Unlimited, 277 MGY expected volume benefit
- Kilimo Lerma Basin Precision Agriculture – Nuup, 35 MGY expected volume benefit

We selected three projects benefiting the Colorado River Basin because of the critical need for water restoration due to the severe and persistent drought conditions the watershed has experienced in the past two decades. These conditions could significantly impact the states, communities, and industries that rely on it.

Details on these projects are included below, and information on all projects funded from 2017 through 2021 can be found in the 2021 Annual Water Restore Report.

[1] *Net positive water % represents the total volume of water returned and restored globally. Some locations have returned and restored significantly more than their target, resulting in a global total greater than 100%. Net positive water is achieved when each region achieves their specific target.*

Project Locations

The locations of the projects funded to date are shown in Figure 1. This map includes projects that achieved 2022 restore benefits, and projects expected to have volume benefits in 2023 and future years.

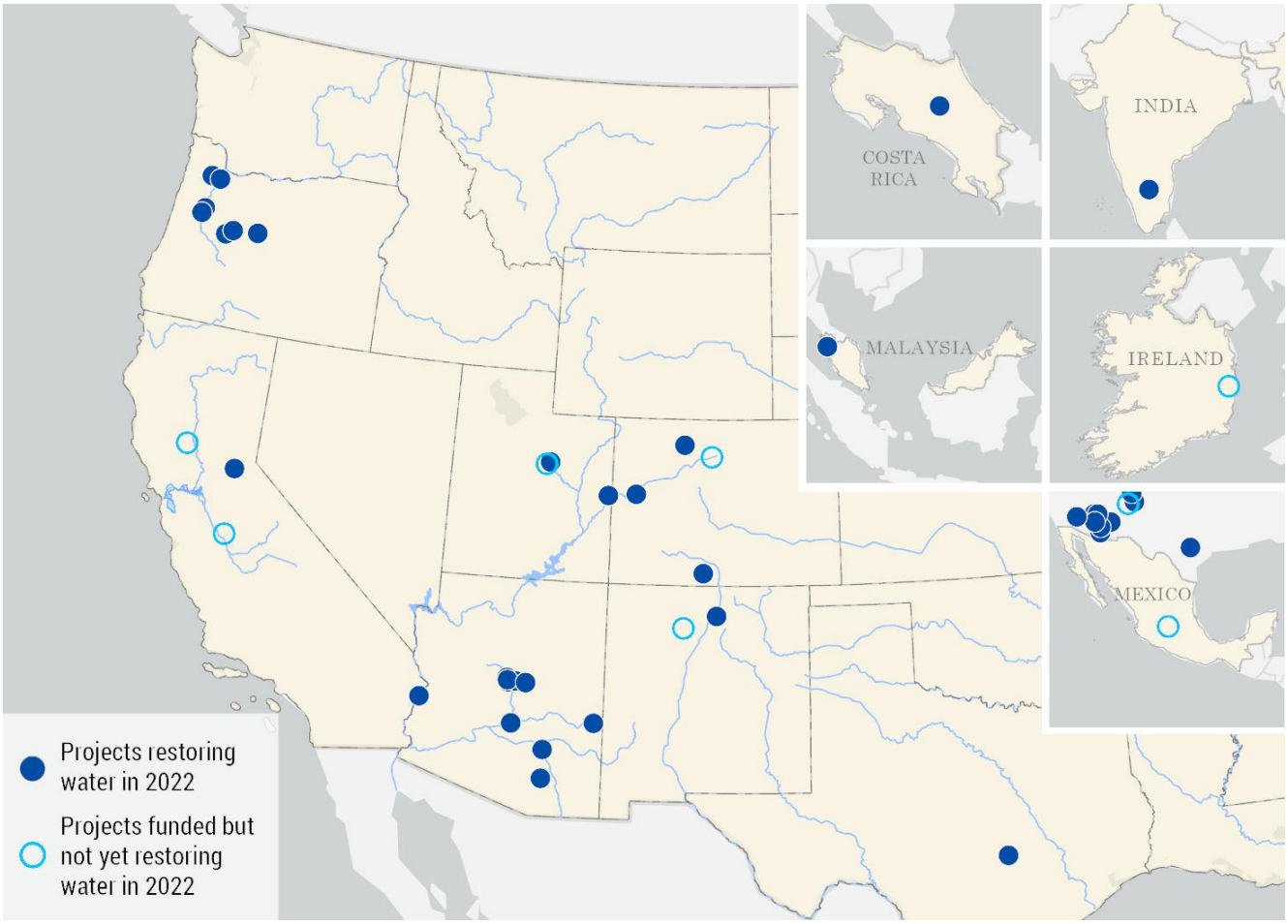

Figure 1. Locations of Intel's 42 water restoration projects funded through December 31, 2022.

Upper Colorado River Flow Enhancement (2022 only)

The Upper Colorado River supports native and endangered fish species. During critical times of the year stream flows in multiple upper Colorado River tributaries are inadequate to support fish and wildlife, sustain water quality, and support recreational benefits. The Colorado river has experienced an extreme and historic drought that has lasted for over two decades. Although there is water available in upstream reservoirs that could be used to increase flows during critical periods, much of this water cannot be released to provide instream benefit without funding for leasing agreements that deliver flows to support ecological needs at critical times.

Upper Colorado River – 15-mile Reach
(Photo credit: Kate Ryan, Colorado Water Trust, 2022)

Key, reliable sources of the water for this project include the Colorado River District and other owners of water rights from Ruedi Reservoir. The benefits of enhanced flows can be seen in the 15-Mile Reach of the Colorado River during summer and early fall. In this reach, increased flows complement water dedicated to the river by the U.S. Fish and Wildlife Service's Upper Colorado Endangered Fish Recovery Program and the Historic Users Pool, a group of western Colorado water users that release water from Green Mountain Reservoir. In another set of Upper Colorado River tributaries, the Fryingpan and Roaring Fork Rivers, low flows are improved by leasing water from Stagecoach Reservoir during winter months. Collectively, water leasing across multiple upper Colorado River tributaries is a tool to sustain habitat for species of concern, enhance water quality and/or support recreation across the region.

This project facilitated a series of agreements among different water management organizations to lease water from multiple upstream reservoirs and deliver it downstream to benefit the Yampa River, the 15-Mile Reach of the upper Colorado, and/or the Roaring Fork River. This provided critical environmental benefits when enhanced flows were needed.

Location:
Colorado River Watershed, Colorado

Implementing organization:
Colorado Water Trust

2022 restore benefit:
533 million gallons

Project timeline:

2022	Project initiation
2022	Year of initial restore benefit
2022	Anticipated benefit end date

The restore benefit is calculated as the increased streamflow volume released in July-December 2022 as a result of the leasing agreement, with a one-time restore benefit of 533 million gallons of water.

Yampa River Flow Restoration (2022 only)

The 250-mile Yampa River originates in northwestern Colorado and is a major tributary of the Green River, which flows south to the Colorado River. Sustained extreme drought exacerbated by climate change have altered the timing of snowpack melt, resulting in low baseflows in the Yampa in late summer and early fall. Low flows in the Yampa impact fish, recreational uses, irrigators, and the local economy. In the face of declining summer flows, the river has increasingly needed to be closed to fishing, floating, and other forms of recreation to mitigate impacts on fish. In this recreation-based town, these river closures have significant impacts on the local economy.

Stagecoach Reservoir is located on the Yampa River and has 36,000 acre-feet of active storage. Even though there is sufficient water in Stagecoach Reservoir, the water belongs to water rights holders and is not allocated or designated to support instream flows. However, releases from this reservoir can be negotiated to increase flows downstream to support aquatic life, recreational uses, and water quality improvements including water temperature.

Upper Yampa River
(Photo credit: Dana Dallavalle, Colorado Water Trust, 2022)

This project facilitated an agreement to release water from Stagecoach reservoir and increase instream flows over an approximately 18-mile reach of the Yampa River. The leased flow provided ecological benefits to fish, recreational benefits by preventing river closure to fishing and tubing, hydropower generation at Stagecoach Reservoir, and water quality and temperature benefits.

The restore benefit is calculated as the increased streamflow volume released in July-September 2022 as a result of the leasing agreement, with a one-time restore benefit of 339 million gallons of water.

Location:
Yampa River Watershed, Colorado

Implementing organization:
Colorado Water Trust

2022 restore benefit:
339 million gallons

Project timeline:

2022	Project initiation
2022	Year of initial restore benefit
2022	Anticipated benefit end date

Price River Flow Restoration

The Price River flows downstream to the Green River in Utah before joining with the Colorado River. Scofield Reservoir is an impoundment on Lower Fish Creek, a Price River tributary. Downstream of Scofield Reservoir, Lower Fish Creek is a Blue Ribbon Fishery. However, due to the persistent drought that the Colorado River has experienced and limited water releases from reservoirs, a portion of the river has experienced chronic low flows and suboptimal habitat conditions for fish. The closing of the coal-fired Carbon Power Plant in 2015 reverted its water rights for evaporative cooling, making a portion of them available to benefit depleted river flows in the winter through water rights leasing projects.

Location:
Colorado River Watershed, Utah

Implementing organization:
Trout Unlimited

2022 restore benefit:
277 million gallons per year expected

Project timeline:

2022	Project initiation
2023	Year of initial restore benefit
2029	Anticipated benefit end date

Price River
(Photo credit: Trout Unlimited, 2022)

When water levels in Scofield Reservoir are low, it is not possible to release consistent flows. This project remedies this problem by modifying Scofield Dam so that it can be managed to release flows consistently for downstream river flow benefit. This project also leases flows from 2022-2029. A new gate and pipe will be constructed into the air shaft of the dam to carry water through the dam in a controlled flow, preventing erosion of the concrete. The dam operator, the Price River Commissioner, and Trout Unlimited staff will work together to establish a flow rating curve for different opening sizes of the gate. The gate will be used to release low flows throughout the winter in future years.

The volumetric benefit is calculated as the increase in volume in Lower Fish Creek and the Price River that results from the dam modification and leasing. The volumetric benefit is variable by month and year based on the volume available and the starting date for this project. When fully implemented, the restore benefit is expected to be 277 million gallons of water per year.

Kilimo Lerma Basin Precision Agriculture

The Lerma River is Mexico's second longest river, flowing over 700 kilometers through five states to its termination in Lake Chapala. Approximately 60% of Guadalajara's water comes from Lake Chapala. The Lerma basin is home to more than 10 million people, which is roughly 10% of the country's total population. Agriculture has been an important factor in the development of the basin, having grown exponentially over the last 50 years. Water scarcity is a major concern in the Lerma basin. Demand for water exceeds the replenishment capacity of the river basin, and the basin now experiences an aggregated deficit. This issue is exacerbated by inefficient water use, particularly in the agricultural sector. The water deficit is often made up by over-pumping groundwater or over-exploiting lakes.

Precision agriculture technology
(Photo credit: Kilimo, 2022)

The project supports the use of artificial intelligence (AI), site-specific data, and technical advice to improve irrigation management of private irrigated family farms. Kilimo team uses data and technology solutions that includes a web-based application, satellite data, crop soil moisture tests, and measurement of precipitation and irrigation inputs to provide real time irrigation demand information. The technology does not require any hardware to be installed at the farm level and supports tailored irrigation scheduling for a variety of high value crops. Following selection criteria to identify the fields best suited to participate in the program, the project takes advantage of the widespread interest from farmers to scale up technology to conserve water with irrigated agriculture, particularly for water-intensive crops like avocado, asparagus, vegetables, berries, and citrus fruit. In addition, the reduced water withdrawal correlates with decreased pumping costs and associated carbon reductions from electric power use. Water savings will also be achieved through NUUP's support providing technical assistance on efficient water use and land leveling to producers whose agricultural practices do not include technified irrigation systems.

Location:
Lerma Basin, Mexico

Implementing organization:
Nuup and Kilimo

2022 restore benefit:
47.9 million gallons per year expected

Project timeline:

2022	Project initiation
2023	Year of initial restore benefit
2025	Anticipated benefit end date

The volumetric water benefit is calculated based on the reduced withdrawal by individual farmers in the Lerma basin due to the elimination of over-irrigation and associated losses as a result of improved irrigation regimes. When fully implemented, the restore benefit is expected to reach a maximum of 47.9 million gallons of water per year.