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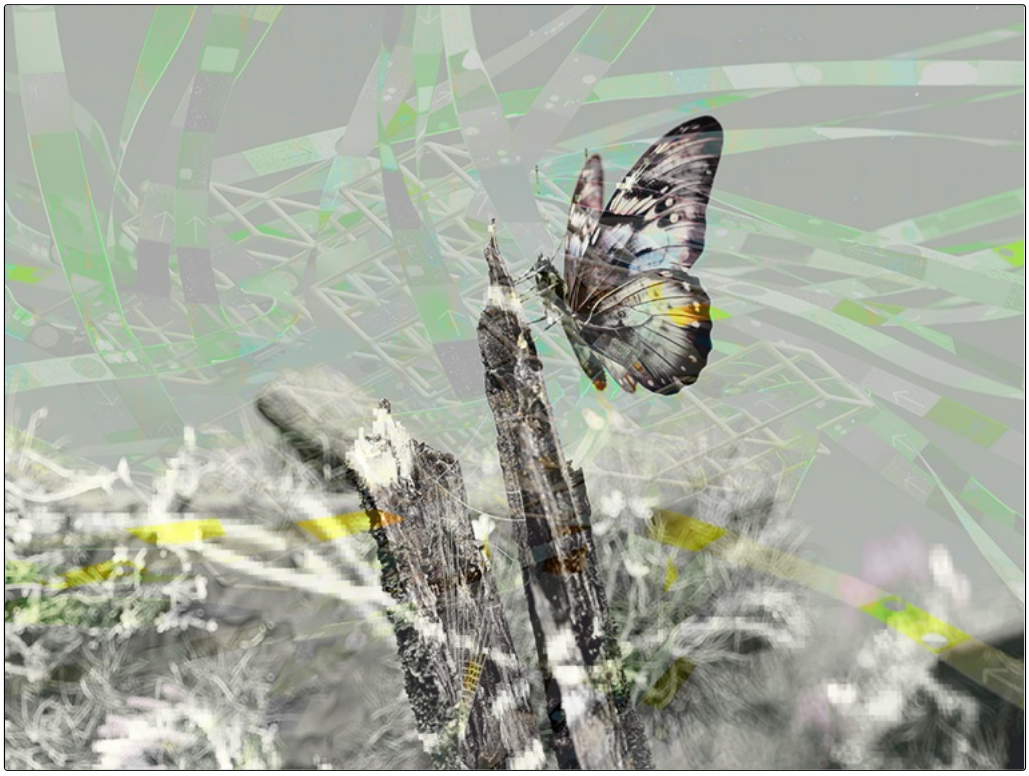
October Newsletter



California's Data Centers:

Environmental Impacts and Policy Challenges

by Kat Camplin

number of data centers that power the digital infrastructure of the modern world. However, the rapid expansion of these facilities raises pressing environmental concerns, particularly regarding energy consumption, water use, land conversion, and the adequacy of existing regulations.

Energy Consumption and Grid Strain

Data centers are energy-intensive operations, requiring substantial electricity to power servers and maintain optimal operating conditions. In California, where the electrical grid is already under pressure from population growth, renewable energy integration, and climate-driven events, the surge in energy demand from data centers presents a tangible challenge. Utilities are investing in transmission and infrastructure upgrades to accommodate these facilities, raising questions about cost allocation and long-term grid resilience.

Artificial intelligence services, such as ChatGPT, further amplify energy consumption. According to estimates from the International Energy Agency, a single ChatGPT query can consume approximately ten times the electricity of a standard Google search. While Google handles billions of searches daily, the per-query energy demand of AI models is significantly higher. This underscores the growing environmental cost of AI and the importance of powering these systems with renewable energy and improving efficiency.

Water Use in a Drought-Prone State

Cooling is essential for data center operations, and many facilities rely on water-intensive methods such as evaporative cooling towers. In regions already experiencing chronic drought, this places additional strain on municipal and agricultural water supplies. Legislation, including Assembly Bill 93, requires data centers to disclose projected and actual water use, improving transparency for regulators and the public. Despite these measures, water consumption remains a critical concern, particularly as new facilities are planned in water-stressed areas.

Land Use and Agricultural Impacts

Data centers require large, flat parcels of land for their buildings and supporting infrastructure. In California, this often means converting farmland or natural habitats into industrial zones. This expansion can reduce agricultural production, fragment ecosystems, and increase impervious surfaces, which exacerbate local flooding and heat island effects. For instance, the proposed Amazon data center in Gilroy would convert Prime Farmland and Farmland of Statewide Importance to non-agricultural uses, raising concerns about the loss of valuable agricultural land and the potential long-term impacts on food production.

The rapid growth of data centers has outpaced the development of comprehensive regulatory frameworks. While some localities, like Santa Clara, have implemented measures such as requiring new data centers to use carbon-free renewable electricity and prohibiting water-intensive once-through cooling systems, these regulations are not uniformly applied across the state. Additionally, Senate Bill 57, which aimed to prevent data centers from shifting electricity costs to residential customers and to encourage cleaner energy use, was weakened during the legislative process, limiting its enforceability and leaving gaps in transparency and accountability.

Balancing Trade-Offs

Technological solutions, such as air-based or closed-loop cooling, reduce water consumption but can increase energy demand, creating complex trade-offs in a state where both resources are limited. Locating facilities near renewable energy sources can mitigate emissions; however, water scarcity, grid pressures, and land conversion remain pressing issues. Communities near proposed data center clusters, from the Central Valley to Southern California, continue to question the net benefits of these developments, highlighting the need for integrated planning and oversight.

Moving Forward

As California navigates the dual imperatives of digital innovation and environmental stewardship, stronger policies, transparency, and enforceable efficiency standards are essential. The environmental footprint of data centers and AI services must be considered in terms of energy, water, land, and local community impacts. Ensuring that California's digital infrastructure operates sustainably is a matter of resource management, equity, and long-term resilience.

California's technological leadership depends on balancing innovation with environmental responsibility. The choices made today will determine whether the state can remain both a digital and ecological leader.

What can you do?

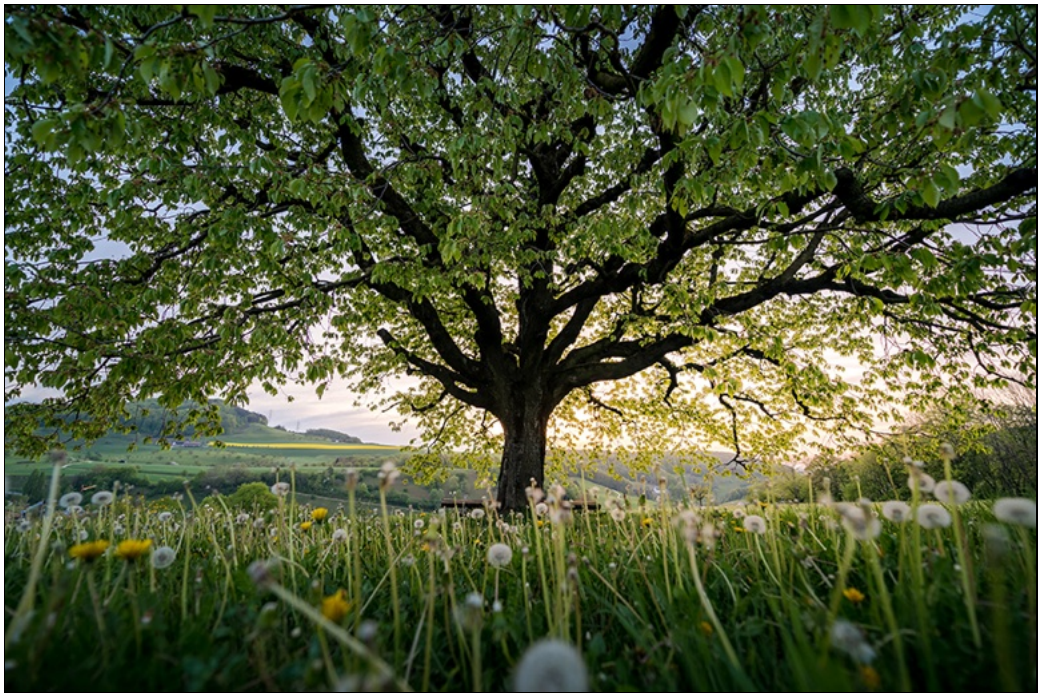
Sustainability in the digital age is not only a matter of corporate responsibility but also individual awareness. Each search, image generation, or AI interaction carries an unseen environmental cost. A ChatGPT-powered search can use ten times more electricity than a standard Google query, and large-scale image generation consumes even more resources.

We can all help reduce the footprint of our digital habits:

- **Be intentional with your clicks.** Use AI when it truly adds value, and choose lower-impact searches for everyday questions.
- **Support responsible innovation.** Favor companies committed to renewable

ensure new data centers are sited responsibly and sustainably.
- **Champion stronger policy.** Urge state leaders to strengthen disclosure laws and ensure California's tech growth aligns with its climate goals.
- **Share awareness.** Help others understand the environmental cost of digital convenience and the power of informed choices.

By making informed digital choices and demanding sustainable practices, we can help shape a future where technological innovation and ecological responsibility progress together.



California Strengthens Land Stewardship with Passage of AB 900

California took a significant step toward achieving its 30x30 conservation goals with the signing of AB 900. The legislation strengthens the long-term stewardship of protected lands, ensuring that conservation efforts provide lasting ecological benefits.

The state's 30x30 initiative is a statewide goal to conserve 30 percent of California's lands and coastal waters by 2030. Its purpose is to protect biodiversity, safeguard wildlife habitats, enhance climate resilience, and maintain critical ecosystem services such as clean water, carbon storage, and recreation opportunities. The initiative involves permanent land protection, restoration of degraded ecosystems, sustainable land management, and collaboration with tribal nations and local communities. Achieving 30x30 requires active stewardship, maintaining ecological health, controlling invasive species, restoring native habitats, and preparing for

Assembly Bill 900 directs the California Natural Resources Agency (CNRA) to develop strategies that reduce barriers to stewardship and increase support for conserved lands. The bill also requires CNRA to include a dedicated section in its 2027 annual report detailing stewardship needs, best practices, workforce requirements, and innovative technologies for land management.

“Conserving land is only the first step,” said a CNRA representative. “If we are serious about climate resilience and biodiversity, we must actively steward these lands, ensuring they are restored, maintained, and safeguarded for generations to come.”

The legislation also emphasizes strengthening tribal consultation and partnerships, supporting the return of ancestral lands, and integrating these priorities into the broader 30x30 strategy.

Conservation organizations applauded the passage of AB 900, noting that stewardship efforts including wildfire resilience, invasive species management, and recovery from extreme weather are essential to achieving California’s climate and biodiversity goals.

The passage of AB 900 reflects growing recognition that protecting land is only meaningful if it is actively cared for, restored, and maintained for future generations.

Upcoming Events

Families in the Forest

Date: October 26, 2025: 10:00am to 12:00pm
Location: Clear Creek (exact location will be available after registration)
Join SEA volunteers Holly White-Wolfe and Juliet Malik—California Naturalists —for a special educational outing designed for families with young children. The event is designed for children, their siblings, parents, grandparents or other caregivers to enjoy together.

Walking will be on mostly flat surfaces in easy-to-hike terrain. Surfaces may be uneven, so hiking boots or closed-toe walking shoes are recommended.

Prepare for the event:

1. **REQUIRED:** Register for the event and sign the waiver form **here**. (Children must be accompanied by an adult. A registration form is needed for each adult and child.)
2. Please bring a picnic blanket, water, and a snack.
3. Wear layers of clothing, a hat, and walking shoes (close-toed).

Any questions? Contact **juliet@ecoshasta.org**

Species of the Month: *Entosphenus tridentatus* (Pacific lamprey)

by Stacey Alexander

Image Credit: Dave Herasimtschuk, US Fish & Wildlife Service

October is the perfect month to showcase one of our 'creepiest' local species… the Pacific Lamprey! Pacific Lamprey are an eel-like jawless fish that inhabit the Sacramento River (below Keswick Dam) and its tributaries. Pacific lamprey are anadromous, meaning they use both freshwater and marine habitats to complete their life cycle. Their life cycle is rather unique in that they hatch from eggs in fresh water and become free-floating larvae and drift downstream to areas with sandy bottoms. There they will live in the silt, sand, and detritus substrates, not to be seen for about three to seven years. They will then migrate downstream to the ocean, where they develop teeth for parasitic feeding on other fish. They do this by latching onto other fish, attaching themselves with their suckers, and feeding on blood and body fluids. After about one to three years of living in the ocean, they return to the fresh water where they spawn and die, releasing marine nutrients into the stream.

So, what makes this species so creepy? Well, other than their spooky parasitic nature and their disappearing in the sand for years, not to mention their eel-like appearance, it must be their sucker-like disc and three cuspid teeth used to cling to other animals to feed. Don't worry though, they don't 'bite' humans.

Image Credit: Pacific Lamprey, David Herasimtschuk/Freshwaters Illustrated, Copyrighted, All Rights Reserved - Used by Permission, https://www.fws.gov/media/pacific-lamprey-6

The spookiest part of this species is its decline. Evidence suggests that significant declines may have occurred over the last 50 years due to a number of issues, including dams, stream degradation, poor water quality, and impacts of climate change. They are currently a California State Species of Special Concern and a Federal Species of Concern. Luckily, there have been many restoration projects to benefit Pacific Lamprey, including passage assessments and monitoring, large and small dam removals, and fish ladder modifications. They also play a very important role in the ecosystem as food for mammals, fish, and birds, nutrient cycling and storage, and as a prey buffer for other species, such as salmon. They are also culturally significant to indigenous people throughout their range, who have all been a vital part of the Pacific Lamprey recovery. So, despite their eerie appearance, they are an essential species I hope to see more of (at a distance) in our watershed.

Darlingtonia californica (California Pitcherplant)

by Ren Redlich

Hidden among the cool mountain bogs of Northern California and Southern Oregon grows one of the state's most fascinating native species, *Darlingtonia californica*.

This rare and beautiful plant has evolved to thrive in nutrient-poor soils

Image Credit: Ren Redlich

Map by Makoto Honda

• **Also called the "Cobra Lily"** because of its wing-shaped leaves that rise and curve like the head of a striking cobra.
• **A true carnivore,** it lures, traps, and digests insects inside its hollow, pitcher-shaped leaves. Once an insect enters the top of the plant, the translucent surface confuses it, causing the prey to slip downward where digestive enzymes break it down for nutrients.
• **A rare specialist,** the Cobra Lily grows only in cold, nutrient-poor seeps and bogs fed by mountain springs. Its limited habitat range makes it one of the few carnivorous plants native to the western United States, found naturally only in select areas of Southern Oregon and Northern California.

A symbol of adaptation and ecological uniqueness, *Darlingtonia californica* reminds us how diverse and fragile California's native ecosystems truly are.

Staying Informed: Tips and Resources

Looking for a thoughtful way to explore climate change? The podcast *A Matter of Degrees* dives into the science, policy, and human side of the crisis.

In the latest episode, climate scientist Dr. Kate Marvel talks about building digital models that show possible futures, from rising temperatures and sea levels to wildfire risks. She also shares insights from her book *Human Nature: Nine Ways to Feel About Our Changing Planet*, exploring how

smart and engaging way to understand both the numbers and the human stories behind the climate crisis.

Be a Voice for the Environment

Do you care deeply about protecting our local environment and the wildlife, forests, rivers, and public lands that make it special? Join our board and help guide advocacy efforts that shape land use, conserve natural habitats, and preserve spaces for recreation and enjoyment. Bring your ideas, energy, and passion to make a real difference for the environment and your community.

Ready to get involved? **Fill out our interest form here.**

Forward this Newsletter to a Friend

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