VOL 1, Spring 2025

ISLA VISTA
ECO-ZINE

Tide & Terra

Vol. 1
The Welcome Issue
@tidenterra

letter from TnT

Dear Readers,

Sustainability and climate change are complex and often overwhelming topics to engage with. Inspired by lessons from the Environmental Studies Department here at UCSB, our goal is to distill these challenges into an engaging format that sparks curiosity and fosters understanding between one another. We aim to make environmental education inclusive and lower barriers with dense/complex scientific language that makes understanding what's happening our world scary!

This is our first Issue and we hope to gauge how interested people would be in our left-brain + right-brain love child. We want to extend an open invitation to anyone for feedback or if you want to contribute to a future Issue! We plan to print every quarter and would love articles, poems, art pieces, book/activity recommendations, info on a campus club, or anything Isla Vista sustainability-related!! If you're interested, we have more information on our last page or reach out to us!

Evelyn Tsang & Sanjana Sujeet
ewtsang@ucsb.edu & sanjanasujeet@ucsb.edu
tidenterramag@gmail.com @TidenTerra on Instagram

why Tide and Terra?

Our lovely campus is sandwiched between land and sea— how perfect!

 Photo taken at Manzi Beach

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Map of UCSB campus and
Isla Vista Farms

Farms around Isla Vista

On Campus Projects

1 • Urban Orchard
- Storke Plaza
- ? Fruit Trees through Edible Campus Program that get donated to AS Food Bank

2 • Vertical Gardens
- Between soccer field + MAC gym
- ? 2 hydroponic towers with produce like radishes, peppers, green onions + tomatoes

Smaller Projects

3 • Sueno Orchard
- 67 Sueno Road
- ? 33 fruit bearing trees, open access

4 • IV Food Forest
- Next to Estero Park
- ? 889 Camino del Sur
- Native, edible, + medicinal plants + trees
- ecovistacommunity@gmail.com
- @ecovistacommunity
- @islavistafoodforest

• IV Community Center Garden 5
- People's Park in Isla Vista
- ? Flowers + food organized through IV Community Services District + ECP
- Volunteer through ECP rotating farms on Instagram

Gardens + Farms

• IV Park Gardens 6
- Estero + Sueno Parks
- ? Plot based gardens, Estero trains beekeepers + organic farmers
- angelak@ivparks.org
- communitygarden@ivpar

7 • St. Michael's Garden
- St. Michael's University Church 6586 Picasso Road
- ? Plot based garden with 16 beds and compost drop offs
- Volunteer through ECP instagram
- saintmikesucsb@gmail.com

• Methodist Community Garden 8
- University United Methodist Church 892 Camino del Sur
- ? Farm + compost drop offs organized through IV Community Services District + ECP
- Volunteer through ECP Instagram
- islavistaumc@gmail.com

• Student Farm 9
- By Orfalea Family Children's Center
- ? Beds, greenhouse, garden towers with produce that goes to AS Food Bank
- Compost pick ups by arbor, Coral Tree Cafe, Ellison, UCen, Library, + Bren
- Through Edible Campus program + Department of Public Worms
- ECP Instagram
- asdpw@as.ucsb.edu
- kcmaynard@ucsb.edu

10 • Greenhouse + Garden Project
- Next to Lot 38 by Storke Field
- ? Plot based gardens
- ECP Instagram
- ghgpucsb@gmail.com

11 12 • Family Student Housing Farms
- STORK - By Storke Apartments
- WEST CAMPUS - By WC Community Center
- ? Plot based gardening
- Compost on Site
- ECP Instagram
- ucsbfshgarden@gmail.com

Cloud Computing, Carbon Polluting

written by Sanjana Sujeet

can you explain the environmental impact of AI?

Artificial intelligence is revolutionizing fields and reshaping how we live our lives at a rapidly accelerated rate. Since its launch in November of 2022, ChatGPT has amassed over 200 million weekly users, and newer forms of AI are being created or updated for specific uses monthly. Like any transformative technology, it has the potential to alleviate or exacerbate issues. The advantages are apparent like saving time on repetitive tasks, supplemental learning, and overall convenience but the disadvantages are less apparent.

Energy Consumption

The energy consumption associated with something as mundane and seemingly innocent as a simple online search often escapes our consideration. While we might not think about this as much with casual Google searches since they are so ingrained in our daily lifestyles- the implications become increasingly significant when we factor in AI. The sheer scale of energy used by AI technology casts a grey light on the convenience we often take for granted- the numbers are nothing short of staggering:

- One chat GPT question consumes 10 times more energy than a Google search
- Data centers' energy consumption is projected to match the entirety of Japan's energy consumption by 2026. This is also 4% of global energy use.

Physical Impact

Online searches extend far beyond their online aspect and into physical infrastructure including servers and data centers. Their hardware components demand tangible resources in order to be continuously operational, updated, and expanded. They use raw minerals like cobalt, silicon, and gold which have both ethical and environmentally damaging impacts.

- The mining of metals in hardware leads to soil erosion and water pollution
- Many electronics are not recycled properly, adding to electronic waste and further pollution and contamination.
- The electronics needed rely on a lot of raw material- a 2kg computer requires 800kg of raw materials.

Water Consumption

Many people might not immediately connect the dots between an online search and its impact on our natural resources. At a glance, these two seem to be vastly different realms. However, taking a closer look reveals a complex web of interconnection that we cannot ignore. Every action we take online like using AI reflects on our environment.

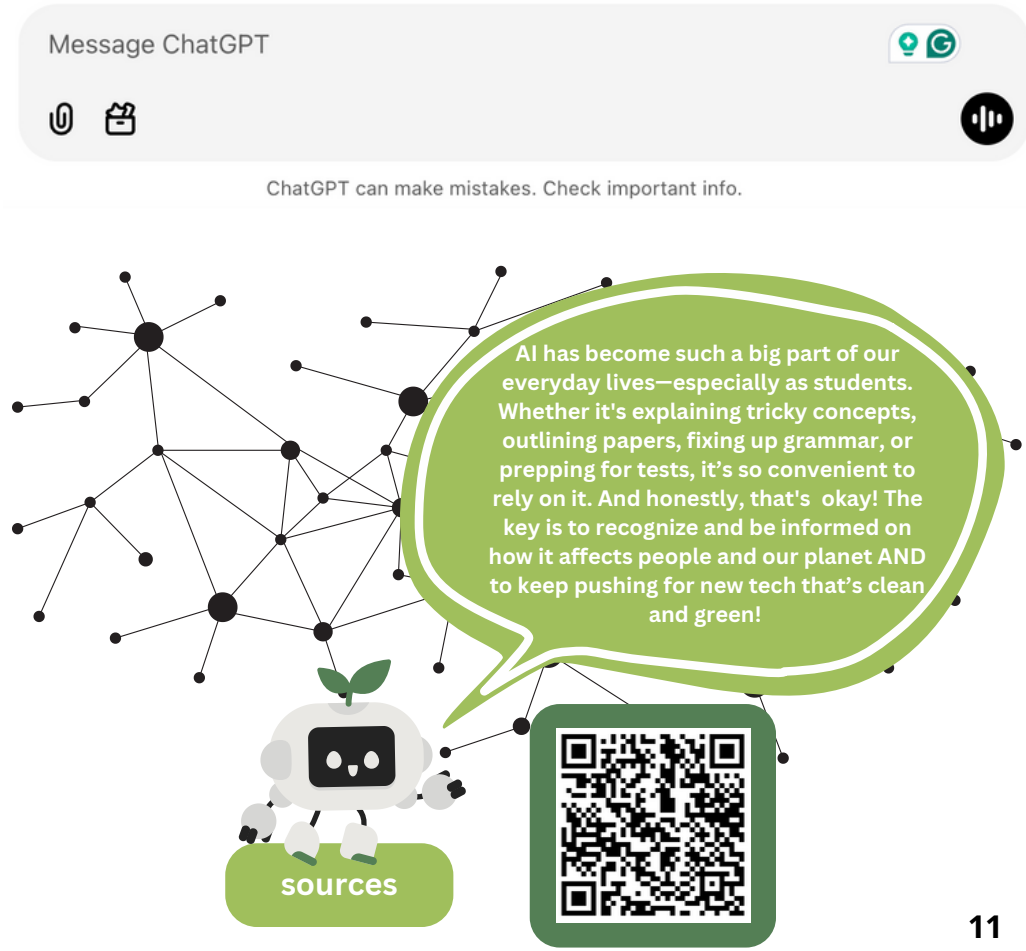
- Millions of gallons of fresh water to cool systems, 2022 just Google data centers consumed 5 billion gallons for cooling which is 20% more than the year before indicating that the amount could get even higher
- In Oregon, 3 data centers use more than a quarter of the city's water supply.
- Soon, AI could consume 6 times more water than Denmark, a population of 6 million. This is staggering when we think about how a quarter of our total population already lacks clean water.

Extraction and Ethics

How could something as simple as an online search contribute to social inequality and the perpetuation of exploitative labor practices? It turns out the connection is alarmingly direct. Behind the scenes of AI lies labor practices and ethical dilemmas that have been kept out of the public eye. The silence surrounding these practices only exacerbates the issues revealing a whole level of consequences that extend far beyond our screens.

- Communities aren't involved in decisions or discussions, most don't know when data centers are built in their areas until afterward. It's entirely up to rich businesses and conglomerates that take advantage of minority community areas that have less management
- In Oregon, the city government filed a lawsuit to keep Google's water use a secret from farmers, environmentalists, and Native American tribes who were concerned about its effects on agriculture and on the region's animals and plants
- In Chile and Uruguay, protests have erupted over planned Google data centers that would tap into the same reservoirs that supply drinking water
- Human-free machine learning is a misconception- Millions of underpaid and sometimes unpaid workers in bad conditions developing algorithms, editing, and labeling AI outputs for each search; often outsourced and exploited from the Global South
- Metal mining is a well-known exploitative industry, taking advantage of undeveloped countries' workers from inhumane hours and pay to working conditions. This industry is also environmentally damaging and can take land from indigenous populations and have far-reaching effects like water pollution and soil erosion.

As we navigate the complexities of digital life and its advancements, it is important to acknowledge and address the impact it has on both the environment and society as a whole. Understanding these connections and the consequences we cannot see is a crucial step towards a more equitable and sustainable future. Tech companies cite many ways AI can help science and the environment from more accurate modeling to easier spatial analysis- but by embedding AI into everything from surgical procedures to essay editors we need to make sure the benefits outweigh the dangers.



this is TRASH.

The problem with recycling

WRITTEN AND ILLUSTRATED BY EVELYN TSANG

Recycling has long been a symbol of environmental responsibility. We've seen this symbol everywhere. It is a symbol for eco-consciousness – however, there is a troubling reality. Understanding the limits of recycling, especially when it comes to plastics, reveals an urgent need for systemic change and personal responsibility

ONLY ABOUT TEN PERCENT of plastic waste has ever been recycled according to the EPA. The reasons are rooted in science and.... economics (are there any surprises here?)

Economic barriers: Recycling plastic is expensive and labor-intensive. It costs more to collect, sort, and process used plastic than to produce new materials from virgin oil and gas.

Material Limitations: Unlike metals or glass, plastic degrades in quality each time it is recycled. This means it can only be reused once or twice before it's no longer viable.

Deceptive Marketing: For decades, the plastic industry promoted recycling as a solution, knowing full well it wasn't economically feasible. Resin identification codes, those little numbers inside triangles (*above*), were marketed as recycling symbols despite their inability to guarantee recyclability.

Expanding the three "R"s:

EXPANDING THE "3Rs" to combat plastic pollution, we must go beyond recycling. EarthDay.org advocates for a broader approach.

Remove: Organize or participate in clean-up drives in your community. Picking up litter not only beautifies spaces but also prevents waste from reaching waterways

Refuse: Say no to single-use plastics. Bring your own cups, straws, and bags to reduce dependence on disposable items.

Rally: Advocate for policies that limit plastic use. Support bans on single-use plastics and push for corporate accountability.

REMOVE

Volunteer ***removing*** the litter in the community!

Want a Litter-Free IV? Here are some local Clean-ups you can get involved in!

IVRPD's "Adopt-A-Block", IV Beautiful (through IV CSD), UCSB student-led organizations (EAB, ECP, Greeks Go Green, etc)

REFUSE

Refuse buying new!

It's good for the environment, AND your wallet ;)

Your choices DO MATTER! Individual changes lead to collective action.

Alternates include buying second-hand via local Facebook Marketplace groups, or thrifting in IV/Goleta!

RALLY

Rallying your community means staying informed!

This could mean following an account, listening to a podcast, reading an article (like you are doing right now!).

By engaging in media, you can be educated on what is going on around you.

WHAT is TRASH?

A Guide to Recycling in IV

REMOVE REFUSE, RALLY, REDUCE, REUSE, Recycle

All items must be empty, clean, and dry.

IN A NUTSHELL, paper, glass, metal, and plastic bottles (#1 and #2 only, or rigid containers #5 that are gallon-sized or larger). *Recycling has changed and there are fewer things we can place in our blue bin in SB county.*

Plastics

#1 PET/ PETE
- Large bottles/containers that once held a liquid

#2 HDPE
- Large containers that once held a liquid (EX: Milk jugs, detergent bottles, shampoo bottles)

#5 PP **Exceptions*
- Large containers sized one gallon or larger

NOT OKAY TO PUT IN
- Glossy, rigid containers such as **CLAMSHELL CONTAINERS**
- Plastic bags, or **ANY PLASTIC FILM PRODUCTS**
- #3 PVC Plastics (this includes some bottles)
- #4 LDPE Plastics (EX: bags and squeezable bottles)
- #5 PP Plastics (EX: yogurt containers, ketchup bottles, drinking straws)
- #6 PS Plastics (EX: plastic cups/plates, CD cases, medicine bottles, **STYROFOAM**)
- #7 OTHER Plastics (this includes some tupperware, reusable water bottles)
- **No number? NOT RECYCLEABLE.**

Paper/Cardboard

- NON-WAX Carboard (EX: Paperboard, Cereal Boxes),
- Paper products (EX: Mail, craft paper, packing paper, envelopes)

NOT OKAY TO PUT IN
- Pizza boxes
- Wax cardboard (EX: Icecream, milk cartons, tetrapack, aseptic containers, freezer meals, **ANY PAPER IN DIRECT CONTACT WITH FOOD/BEVERAGE**)

Metals/Glass

- Aluminum cans, foils, trays
- Caps and lids from bottles, jars, and steel cans
- Empty paint cans
- Empty spray cans
- Scrap metal + parts
- Glass/Aluminum bottles and jars.

NOT OKAY TO PUT IN
- **TEMPERED GLASS** (EX: Plates, windows)

RECYCLABLE IN SB COUNTY:

NON-RECYCLABLE IN SB COUNTY (AKA, TRASH):

*For more information on **Waste Disposal resources in Isla Vista**, visit islavistacsd.ca.gov/waste-disposal

For more information and guides on **how to recycle in Santa Barbara County, visit lessismore,org

cut or tear along this line

DISPLAY THIS PAGE by your disposal bins

*For more information on **Waste Disposal resources in Isla Vista**, visit islavistacsd.ca.gov/waste-disposal
For more information and guides on **how to recycle in Santa Barbara County, visit lessismore,org

Turning the Tide

by Sanjana Sujeet

a collection of 3 climate positive spotlights pieces

It's easy to get caught up in bad news and climate anxiety with headlines focusing on alarming trends and dire predictions. While it's important to stay informed on these issues, it's also important to recognize the positive progress that has been made- the quieter narratives of communities coming together, innovative solutions taking root, and ecosystems rebounding against the odds. Amidst the challenges of the climate crises, stories emerging from all over the globe remind us that humanity can bring about a powerful force of creativity, collaboration, and, above all, hope.

sources for all 3 articles

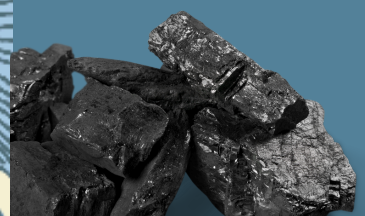
From Black Smoke to Green Horizons

Britain's last coal-fired plant has shut down; ending their 142-year history of coal use. Its significance is huge since Britain was also the first country in the world to start coal-powered stations in 1882 with the Holborn Viaduct power station. Their other large coal-powered plants have been switching to alternate power sources or closed from 2013 onwards. This is a huge step towards their goal of lowering emissions.

Coal power which used to account for 80% of the UK's energy in the 1980s has diminished to under 1% due to carbon taxes and cheaper renewable energy options. According to Greenpeace, coal is the most damaging fossil fuel releasing more carbon dioxide than gas or oil while also producing mercury, arsenic, and soot. 13 countries have already phased out coal, but Britain is the first G7* nation to do this.

The energy company is working with multiple unions to move workers to other areas of the industry- when talking about a Just Transition to a more sustainable future, compensating workers and making sure they aren't left in the dust is crucial. Some things Uniper, the overseeing company, did was offer internal job transfers, develop relations with other energy companies to offer external job transfers, create an on-site job center and fairs with local employers, fully fund any training their workers would need for external jobs, and offer workers the choice to leave early for a new job and still receive their severance pay and benefits.

*G7 refers to Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States, an informal block of industrialized democratic countries.



Steer a ship, Save a whale

In the eastern Mediterranean, there are fewer than 200 sperm whales and the number is rapidly diminishing due to human action. A study at Benioff Ocean Science Lab at UCSB has found that Global shipping routes overlap with 92% of the migratory ranges of 4 prominent whale species. Other studies show that more than half the whale population has died after collisions with large ships; however, even this statistic is severely underreported. Research suggests that for every documented whale injured by a ship, 20 more have been fatally hit and not detected. While they spend most of their time in the depths of the ocean, whales are vulnerable to ship collisions since they surface for long periods of time to breathe, which puts them in the path of ships. The size difference makes accidents even more probable with cargo ships being over 10 times the length of adult blue whales.

Arcadia Shipmanagement is the first Greek shipping company to reroute its ships to protect endangered species. This change not only protects whales from collisions but preserves breeding and migration areas and minimizes damage from oil and noise pollution that degrades habitats. Coming from one of the largest ship-owning nations in a high-activity area, this is a powerful statement that will raise awareness and lead to more positive action. While mandatory procedures to reduce collisions are unfortunately still rare, tracking tools like Benioff's WhaleSafe show that efforts to reduce collisions have been working, and we are moving in the right direction.

Charging Ahead

=

A tailoring company in South India is using refurbished EV batteries to provide stable energy that increases their own productivity while showcasing a way to reduce energy waste. Previously, power cuts, storms, and the necessity of energy-draining air conditioners in the hot climate would cause major interruptions for the workers. Now, this battery pack by energy storage company Nunam made from old EV batteries keeps their machines running even during power outages- workers say it's a godsend since they don't have to manually stitch or worry about not finishing projects on time. Nunam plans to power one million homes and small businesses by the end of this decade using EV batteries. India is the most populated country and one of the biggest emitters of GHGs, shifting to renewable energy could cause a huge reduction in GHGs. However, India also could become one of the largest waste generators due to few solar, wind, and EV recycling plans. Moving to a circular economy that maximizes all manufactured products and promotes less waste and more reuse could be a huge opportunity for India to profit from recycling while creating new jobs and protecting their environment's health.

Desert Blooms

DESERT BLOOMS // JENNY CAO

as a spring seed, i dream of what petals i'll grow:
if they'll be a soft pink or your favorite yellow.

i hope they'll be soft to touch
or even shaped as little hearts.
i want the scent of my honeysuckle sisters
or the height of my sunflower brothers
because a seed's greatest joy
is to be seen and plucked by their lover.

in the summer, i work hard to bud:
stealing droplets hidden in the cracks of the soil,
or stretching my roots out to feel the moon's rays.
i hide in secrecy with the worms and their foreign murmurs,
hoping they'll be kind enough to poop good nutrients for me.
if i scavenge long enough,
perhaps my stem will strengthen, my petals will spread–
i'd be a beautiful flower worth a million eyes,
a sweet fruit, the apple of your affection.

but my bloom has fallen short of that.
instead of a fruit blossom or even a willow tree,
i grow to be a cactus in a dying september
with dull, green skin that prickled all over,
and stump-shaped limbs instead of a slim stem.
even cracked corpses of leaves lay in a gorgeous sunset color
that makes you stop to take them home
as you swerve your body away from mine.

what now?

didn't i do everything right? didn't i get water, light, soil, and… gossip? was it not enough for me to flourish into something beautiful?

but aren't i still a flower? even without the petals and scent? so why do i stand in this desert alone? Amongst cracked and dry dirt, looking at indirect light and not basking under the sun? Where are my showers, my bouquets?

why won't any of you look at me?

but even in dry winter, seeds bloom.
magic does not exist and my body
remains as it was:
oblong, barbed, and flat.

still, it's sturdier than the roses
against the dust storms and droughts
and who would've thought?
from my prickly body blooms thin, pink petals.

i did not bloom under your touch,
nor die in your absence.

love will come easy because it blossoms in myself.

Rooted in Hope: A Spotlight on Change-Makers

by Sanjana Sujeet

Mari Copeny

KNOWN TO MANY as Little Miss Flint, Mari Copeny started her activism journey at just 14 years old. Her letter to President Obama regarding Flint's water crisis not only drew attention to the dire situation but also prompted him to visit the city. Today, Mari uses her voice and platform to raise awareness about the ongoing water crisis in Flint and working to fundraise for urgent needs. She has collaborated with Hydroviv water filters to provide families with safe drinking water by donating filters that eliminate harmful toxins. Her efforts have led her to meet with the last three U.S. presidents and she was honored with the Billboard Change Maker award, making her the youngest recipient to date.

Nemonte Nenquimo

NENQUIMO HAS GROWN UP seeing the effects of exploitation on her land and people and in a landmark legal victory, she successfully sued to safeguard half a million acres of Ecuadorian Amazon from the clutches of oil drilling. Her efforts have effectively shielded this critical region from exploitation, deforestation, and environmental degradation. As a prominent indigenous politician, Nenquimo is a powerful advocate for the Waorani nation, ensuring their voices resonate in discussions about stewardship and preservation of their ancestral lands. In recognition of her unwavering commitment, she was honored with the UNEP's 'Champions of the Earth' award in 2020 and earned a place on Time Magazine's list of the 100 most influential people in the world, the only Indigenous woman on the list and the second Ecuadorian to ever be named in its history.

Isra Hirsi

CO-FOUNDING AND SERVING as the co-executive director of the U.S. Youth Climate Strike, Isra Hirsi stands out as a strong advocate for intersectionality and inclusivity within the climate justice movement. With an impressive track record, she has spearheaded hundreds of youth-led climate strikes across the nation, making a significant impact in the realm of environmental activism. Her dedication has not gone unnoticed; she is one of the esteemed recipients of the Brower Youth Awards, North America's premier honor for audacious young environmental leaders and has earned a spot on Fortune's prestigious 40 Under 40 list in Government and Politics.

Tidepooling 101

WHY TIDEPOOL?

Why not! We are lucky to be on the California Central Coast, home to a wide variety of unique species in land, air, and sea!

TIDEPOOLS ARE shallow pools of seawater that collect in depressions along the rocky intertidal shore when the tide is low. They are home to a variety of marine life that you can observe and interact with.

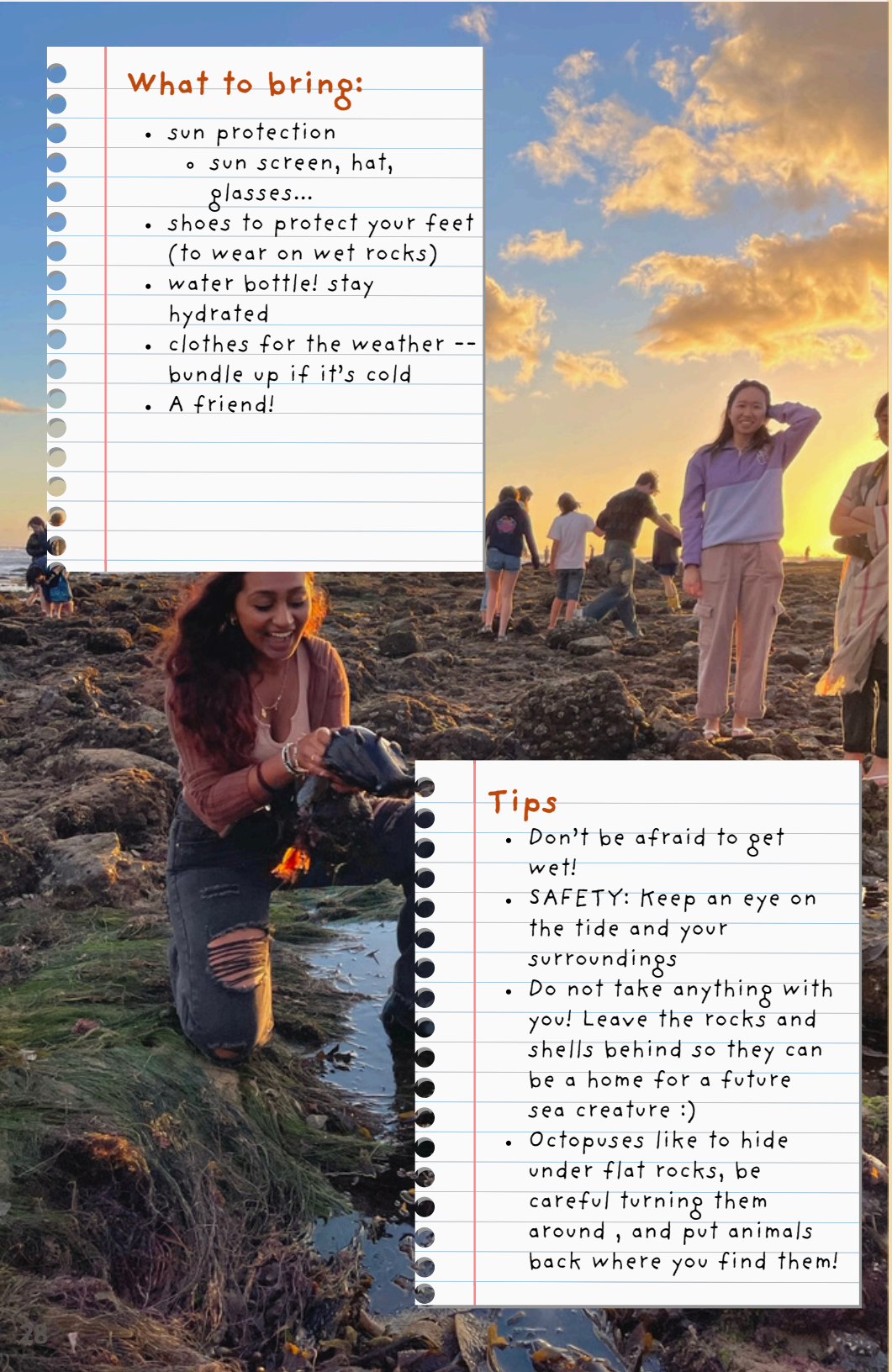
These animals are not easily seen otherwise, so tidepooling can offer an educational, close-up view (and careful touch!) of what the Santa Barbara Channel has to offer.

WHERE DO I GO?

Anywhere! Go out and explore the coastline.

The most accessible beach to students is via the stairs by the *Santa Rosa Dorms,* as well as by *Manzanita Village* and *Campus Lagoon.*

HOWEVER, if I had to pick a favorite: Go out to *Deverough Slough* -- There are many sea hares roaming about and octopuses hiding under rocks! It might be a trek, but it is worth the walk.



What to bring:

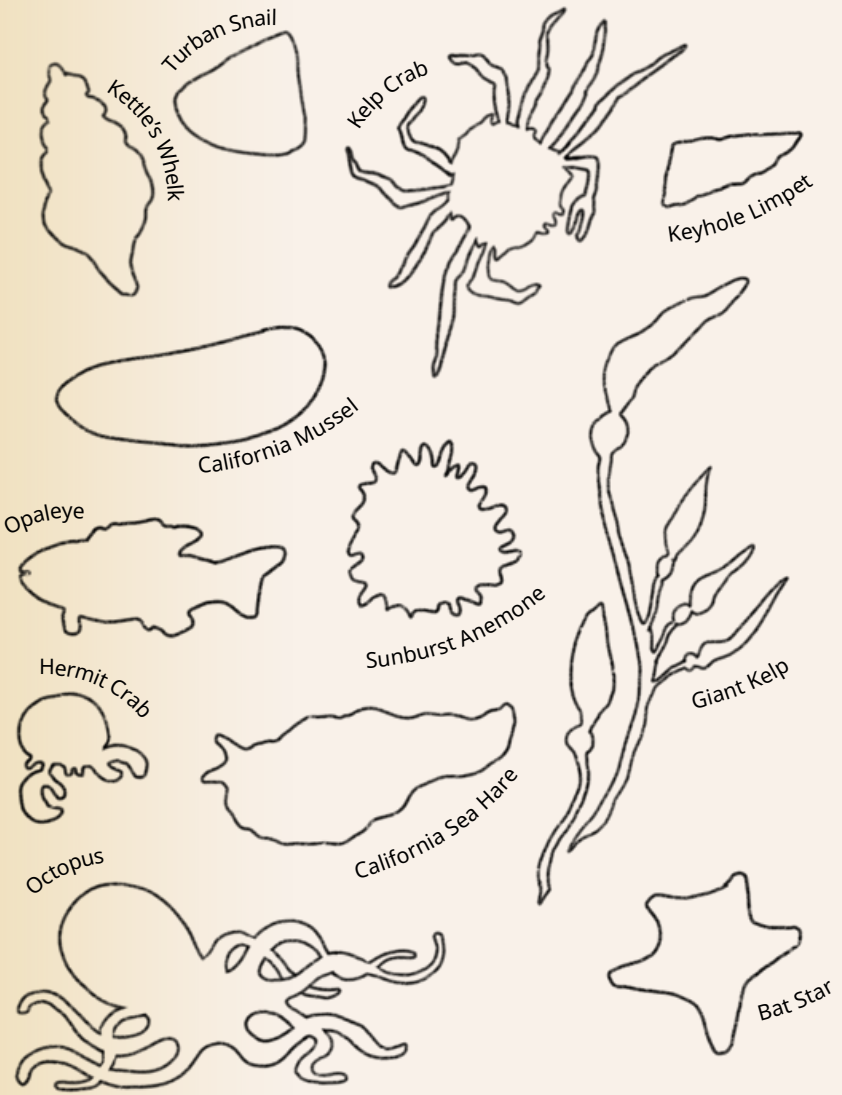
- sun protection
  - sun screen, hat, glasses...
- shoes to protect your feet (to wear on wet rocks)
- water bottle! stay hydrated
- clothes for the weather -- bundle up if it's cold
- A friend!

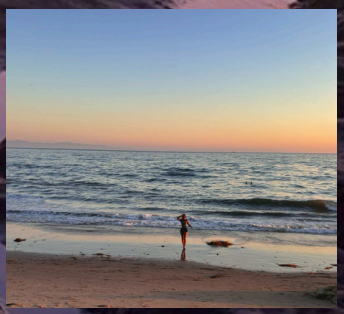
Tips

- Don't be afraid to get wet!
- SAFETY: Keep an eye on the tide and your surroundings
- Do not take anything with you! Leave the rocks and shells behind so they can be a home for a future sea creature :)
- Octopuses like to hide under flat rocks, be careful turning them around , and put animals back where you find them!

Who's that Sea Creature?!

ACTIVITY: Color/mark this guide along as you discover new friends.
Note: This is not size-accurate... also please do not touch the crab unless you are properly trained.





Lets Work Together!

Are you interested in science communication or art? Are you passionate about the environment and making changes in your community? We want you to contribute to our next issue!

Environmental issues are part science, research, policymaking but they are also part community efforts and communication! We want to encourage all science storytellers and a build a community where we can express our emotions about the constantly changing environmental and political climate while communicating issues we want our peers to know about.

We plan to print every quarter and include submissions from whoever matches our values of:

1. accessible science communication-which means no unexplained jargon or anything requiring high science literacy. we want things explained for the general public.
2. truth- misinformation is the new epidemic and we want to combat this, check your sources!
3. ?????

Find us on Instagram @TidenTerra where we will link a Google Form in our bio. We will also have a form for any comments, concerns, or things you'd like to see in future issues and are currently developing a website for online access to Tide and Terra! Feel free to reach out to us if you have more questions through DMs or our email: tidenterramag@gmail.com.

Thanks for your Support!
-Sanjana and Evelyn

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-Sanjana and Evelyn