## ASsquare_logo.tif Coastal Fund Minutes

## Associated Students

Tuesday, 02/01/22, Zoom: <https://ucsb.zoom.us/j/89636182726?pwd=VU14ei8rQnVOV0xmR0xYeHh5MmhPUT09>

**CALL TO ORDER: 6:03 PM**  recorded by Carissa

1. **ATTENDANCE**

| **Name** | **Note:**  absent (excused/not excused)  arrived late (time)  departed early (time) | **Name** | **Note:**  absent (excused/not excused)  arrived late (time)  departed early (time) |
| --- | --- | --- | --- |
| **Ethan Estrada**  **Chair** | **present** | **Joelle CantoAdams**  **Outreach Coordinator** | **present** |
| **Mykala Listorti**  **Co-Chair** | **present** | **Visala Tallavarjula**  **Outreach Coordinator** | **present** |
| **Emma Swanson**  **Undergraduate Rep** | **present** | **Sarah Siedschlag**  **Advisor** | **present** |
| **Erika Chan**  **Undergraduate Rep** | **present** | **Carissa Stewart**  **Administrative Assist** | **present** |
| **Anannya Deshmukh**  **Undergraduate Rep** | **present** | **Ethan Engler**  **Senate Liaison** | **present** |
| **Austen Apigo**  **Graduate Student Rep** | **present** | **N/A**  **Senate Liaison Proxy** | **N/A** |
| **Michaela Sten**  **Graduate Student Rep** | **present** |  |  |

1. **COMMITTEE BUSINESS**
2. Approval of Attendance and Proxies

*MOTION/SECOND: Ethan/Anannya*

*Motion language: Motion to approve attendance and proxies.*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

1. Approval of Minutes

*MOTION/SECOND: Ethan/Kaley*

*Motion language: Motion to approve minutes*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

1. **PUBLIC FORUM** (Announcements, appreciations, concerns, requests to have items added to agenda)
2. Approved the informal endorsement of the 100% Clean Energy resolution discussed last week

1. **REPORTS**
2. Advisor Report: Siedschlag
   1. applications for new administrative assistant is closed and we have 16 applicants
   2. eab is borrowing supplies this weekend
   3. deadline ended for dive support
3. Chair Report: Estrada
   1. Our meeting structure for next quarter
   2. Our decision meeting strategy for this quarter
4. Vice Chair Report: Listorti
   1. sent out a when2meet for retreat
5. Senate Report: Engler
6. Administrative Report: Stewart
   1. only two projects for week 8 so there is some more time to do decision meeting
7. Coastal Service Program Report: Stewart
   1. another successful beach clean up this weekend and have plans for a csp every weekend of february
8. Outreach and Education Report: CantoAdams and Tallavarjula
   1. did get sent the first draft on the annual report
   2. completed 3-4 check ins last week
9. Sub-Committee Reports
   1. Lock-in Fee
      1. Looking at a $4.32 increase (translates to $3.00) for Fall, Winter, Spring, and Summer quarters on the AS side - comes to about an additional $200,000 to our current budget
      2. Currently drafting our “application” that will be submitted on Thursday at the latest
      3. Met with GSA Co-Presidents - presenting at their meeting on Feb 8th in order to have our request added to the ballet; seeking to implement a $3 fee
   2. External Communications
      1. first meeting on friday at 1 PM
   3. Equitable Compensation
      1. nothing to add
10. **AGENDA**
11. Approval of Agenda/Additions to Agenda

*MOTION/SECOND: Ethan/Anannya*

*Motion language: motion to approve agenda and additions to agenda*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

1. **NEW BUSINESS**
2. Extension Request for WIN 21-04

*MOTION/SECOND: Ethan/ austen*

*Motion language: motion to approve extension request for WIN 21-04*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

1. Extension Request for FALL 20-04

*MOTION/SECOND: Ethan/Erika*

*Motion language: motion to approve extension request for FALL 20-04*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

1. Extension Request for FALL 20-05

*MOTION/SECOND: Ethan/Erika*

*Motion language: motion to approve extension request for FALL 20-05*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

1. **DISCUSSION**
2. Overview of tonight’s presenters
3. **PROJECT REVIEW**

**Project Title:** CF-202201-01417 | The Combined Effects of Fluctuating Temperature and Diet On the Physiological Performance of Generalist Intertidal Fish

**Sponsoring Org:** Department of Ecology, Evolution & Marine Biology

**Project Leader:** Madison Heard

**Summary:**

Temperature has been well documented to influence the behavior, physiology, and ecology of fish while other factors (diet, oxygen, pH) remain less studied. In particular, few studies have examined the modulating influence diet may have on the capacity of ectotherms to acclimate to thermal stress -- specifically in highly-fluctuating environments. A coastal tidal wetland is an ideal system to study the influence of diet on the physiological performance during rapid temperature swings since many of the fish that inhabit these systems display generalist feeding strategies and routinely experience significant changes in temperature. In the Carpinteria Salt Marsh, daily tidal cycles create rapid 10-15°C changes in temperature and can introduce a challenge to the resident species. My project aims to understand the combined effects of fluctuating temperatures and diet on the physiological performance of fish using different types of prey items commonly found in a coastal wetland ecosystem.

**Presentation Notes:**

* **passionate about undergraduate mentoring**
* **have a student come in the summer and have a project**
* **begin work into the carpinteria salt marsh**
* **ucsb reserve-lots of bird watching but interesting for thermal stress and changing tides**
* **looking at combined affects of temperature and diet**
* **fish live in very different water availability**
* **a very large range of temperature**
* **fish need to be able to acclimate to those temperatures**
* **think the diet is what makes the fish acclimate to thermal stress**
* **interested in comparing a few types of prey animals in the marsh**
* **look at the longjaw mudsuckers- kind of nice because they will eat pretty much anything**
* **larger fish in the marsh and very common in the marsh**
* **has been previously used in research**
* **treatment plan- will have temperature as a variability**
* **control will be static temperatures**
* **throw in 2 diets- grapsid crab and ca horn snail-**
* **grapsid crab are harder to get to, fight back,**
* **snail is more static and easier to get to but less meat**
* **2 month acclimating treatment**
  + **will take whole body responses with growth rate and mass**
  + **will take a heart rate test**
  + **will take enzyme assays**
* **will make a more robust treatment**
* **lots of undergraduate involvement and will have a lot of field work in the marsh**
* **will be doing fish husbandry for 2 month acclimation treatment**
* **looking for 2-3 undergrads in order for them to have a diverse experience**
* **lab work experience for heart rate test**
* **student will create an independent summer research project-was able to present at scientific conferences**
  + **western society of naturalists meeting**
* **this research project is novel since its combines fluctuating temperatures and diet on physiological performance**
* **numerous opportunities to engage undergraduates**
* **novel techniques**

**Board Questions:**

* **brought up how temperature and diet hasn’t been studied why?**
  + **the logistics is tricky**
  + **studies often only focus on one factor**
  + **diet is a relatively new diet that is to be explored**
  + **burgeoning field for diet and physiological effects**
* **noticed in application, that you are recruiting undergrads without experience. could you provide examples of directions some undergrads could take**
  + **collecting heart tissue samples- thought students could analyzing the enzymes within the heart issues and having that project is feasible**
  + **could publish with her- if a student is really interested in a specific idea then happy to help in whatever way she can**
* **wondering why you set up internship as a stipend**
  + **based on what her labs have done in the past**
  + **lab days can get pretty long**
  + **ideally would be at 40 hours a week during the summer**
  + **want to be flexible and give them days off when they need some time to themselves**
* **could you clarify how many interns are you hiring and what is the distribution**
  + **would love one student she could dedicate energy to during the summer**
  + **would hate to overload herself so only looking at one intern for summer and in spring the acclimation treatment will take a lot of help so more then**
  + **looking for at least 2 undergrads during spring quarter**
* **what do you think are the most important aspects of a mentor**
  + **patience is the most helpful when being a mentor because undergrads do not always know what they are doing**
  + **establishing a good culture and keeping mental health high is important to her**

**Board Discussion:**

* **clear how much madison cared about mentorship**
* **concerns about stipend but its more than pisco**
* **always great to pay undergrads more-but should do it systematically**
* **anytime people do a stipend- there are days where the hours don’t always add up**
* **wouldn’t want to hire without counted hourly**
* **would much rather do hourly- wouldn’t do such a high stipend**
* **better accounting**
* **a lot of variability and a systemic question**
* **within reason**
* **overall very good project**
* **project itself is really cool**

*MOTION/SECOND: Ethan/austen*

*Motion language: motion to table discussion for CF-202201-01417*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

**Project Title:** CF-202201-01373 | Coastal ticks: examining the link between restoration and tick-borne disease risk in Santa Barbara

**Sponsoring Org:** Department of Ecology, Evolution & Marine Biology

**Project Leader:** Kacie Ring

**Summary:**

The primary goal of this proposal is to use an interdisciplinary approach to understand how restoration efforts affect the distribution and prevalence of ticks and tick-borne diseases around Santa Barbara. This project will require field surveys collecting ticks, trapping small mammals, and catching lizards. After gathering meta-community data on ticks and their vertebrate hosts, the project will require subsequent lab work and data analyses including tick ID, pathogen testing, and mathematical modeling. The focal habitats being surveyed include coastal chaparral sites near UCSB and on the Channel Islands, including Coal Oil Point, North Campus Open Space, and Santa Cruz Island. The objectives of this type of research include determining 1) the diversity/abundance of ticks, 2) their common host community, 3) and their pathogen prevalence to 4) assess tick-borne disease risk for those who enjoy outdoor spaces around Santa Barbara.

**Presentation Notes:**

* **works for a lab that focuses on disease ecology**
* **looking at emergence of vector-born zoonotic diseases**
* **these diseases can be transferred to other species and even humans**
* **22% of emerging diseases are vector borne zoonotic diseases**
* **ticks are the most common species that spread vector borne zoonotic diseases**
* **humans are a dead end host**
* **the composition of host community is really important**
* **presence of different host is important**
* **need proper habitat and vegetation for a healthy host community**
* **abiotic factors also really affect the vector species of ticks**
* **lyme disease is the most common vector-borne disease in the us**
* **maintained by ticks and their host community**
* **lyme disease emergence on the east coast was associated when land was converted from agricultural land back to oak woodlands**
* **does restoration have a link to tick-borne pathogen risk?**
* **will look at restoration in santa barbara at ucsb north campus open space and santa cruz island**
* **santa cruz island was restored from ranchland- will look at if the community restoration will bring back tick and tick borne diseases**
* **are there even ticks in coastal areas-tick research is concentrated in oak woodlands but recent research at ucsb saw a higher area number of ticks in coastal areas**
* **will determine the link between restoration and tick-born diseases**
* **will partnering with the restoration staff of ccber and national park service**
* **will do tick drags**
* **will do lizard surveys because they are the primary hosts of ticks in southern california**
* **will take ticks nd extract dna and screen fro tick born pathogens**
* **met with lisa stratton at ccber**
* **will look at different restoration sites years range**
* **have collaboration in motion**
* **scientifically want to determine how habitat restoration alters and what is the composition of invasive species versus native**
* **excited to mentor and train undergrads in the statistical techniques**
* **would be really interesting to expose undergrads to the national park service**
* **excited to collaborate with ccber and contribute tick specimens and advance the knowledge on tick born diseases**
* **hoping to bring a community hope to protect people and a great opportunity to train undergrads**

**Board Questions:**

* **any specific methods to ensure safety of people involved** 
  + **in any field work there has to be safety precautions**
  + **wear long sleeves, double gloves, hats, tuck pants into shoes, keeping yourself protected from tics, vegetation, and rodent**
  + **teach them how to do tick checks**
  + **have to suck for 48 hours so if they catch a tick it will lower risk of catching lyme disease**
* **how will the lizards play a role since they cannot catch and spread lyme disease**
  + **the lizard removal plot did not reduce disease risk**
  + **the lizards support huge population of ticks because they feed off of lizards**
* **how will you plant to present findings to the community**
  + **have presented at seminars on disease risk**
  + **hope to use this project to prevent disease risk in california**
  + **confined with ranges of 0% risk to 30% risk**
  + **working with ccber and can present at seminars and share the results of the findings**
* **noticed you mentioned creating some sort of numerical model, wondering if you could expand**
  + **her lab is a theoretical lab mostly**
  + **the idea is that the response variable will be pathogen presence**
  + **going to have this huge dataset and hoping it will inform her model**
  + **will use this data to create mathematical models**
  + **don’t know what effects what yet but want to ultimate goal is to create a model**
* **could you go into what the independent research might be working on**
  + **determine abundance of small animals with market capture data**
  + **all sorts of projects they could do**
  + **small mammal abundant surveys, lizard abundant surveys,**
  + **could come up with own side projects or create new project**
* **how much involvement would undergrad have** 
  + **they would collect the data together**
  + **that would be a collaborative effort**
  + **mentor potentially how to do statistical analysis**
  + **will help depending on how much help they need**

**Board Discussion:**

* **really good as well**
* **questions were answered well**
* **great opportunity**

*MOTION/SECOND: Ethan/mykala*

*Motion language: motion to table discussion for CF-202201-01373*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

**Project Title:** CF-202201-01416 | Meadowlark Song Study Year 2

**Sponsoring Org:** Channel Islands Restoration

**Project Leader:** Elihu Gevirtz

**Summary:**

I will record the songs of meadowlarks on the channel islands and on the mainland of Santa Barbara County with the help of UCSB student interns. This is the second year of the study and will help me determine whether there are differences in the songs and whether there might be different subspecies on the islands that have never been recognized before.

**Presentation Notes:**

* **continuation of last years project-story behind it is doing restoration on san nicolas island and listening to the meadowlarks all day long and their songs sound different than ones on the mainland**
* **what significance does the song difference have**
* **wonder if there was a different subspecies on the islands of meadowlarks**
* **no one knew if they migrated from the islands- think that each population stays on each island**
* **think that each island has own subspecies and each island has their own song**
* **last year took all recordings on june and july but because it was late in the season and a drought year and didn’t hear them singing**
* **would like to start ealy in march and go to more places with singing meadowlarks**
* **did not get enough to be statistically significant**
* **the population is declining with 50% decline in 50 years**
* **will answer whether the songs on the island are different on the mainland**
* **went to santa rosa island**
* **typically male meadowlarks will sing on the highest perch available**
* **played videos of bird songs**
* **last year we funded full request and realized had unspent money from before so we only spent about $4000**
* **have a new fiscal sponsor**

**Board Questions:**

* **who and where you plan on sharing your results and what impacts will your results have**
  + **when the whole things done he would like to add to the national repository of bird songs**
  + **would like to publish a paper when he has enough data to make it more statistically significant**
  + **would like to collaborate with other researchers**
  + **present findings at islands symposium**
  + **and symposium for wildlife**
  + **one person's study will open up a whole other place of inquiry**
  + **think it will open a place of inquiry for other researchers and projects**
  + **might recognize subspecies that we didn’t know before**
  + **might lead to additional protections of meadowlarks and ecology of grassland ecosystems**
* **wondering if you could elaborate more on what you learned from your time last year, did you learn something anecdotally and what will you do to make this more successful**
  + **learned where not to go and where to go**
  + **learned that he needed to start earlier and know where to go back to**
  + **also learned how to use the equipment**
  + **all the interns were really helpful**
  + **taught them quite a bit about local ecosystems**
* **did you think you will be able to get into the fields soon enough since we let you know of our funding decisions in mid march**
  + **yes that will work still because they will still sing in april**
* **at coastal fund we are not able to fund all projects in full, what line items are most important in order to make your project viable** 
  + **the main cost is time**
  + **can volunteer some of his time without getting paid for his work**
  + **boats and devices would be most important**
  + **can cut out some of the sites but would do more with their own time**
* **wondering what your intern support group would look like and how you would allocate money**
  + **had more applicants than he could accept**
  + **took available money and divided among ucsb interns**
  + **would do ucsb interns again and would be a value of 15-25 an hour plus paying for boat transportation and provide for the stay on the island**
  + **the time window would be the field season from april 1st to august 1st**
  + **hopefully they would stick around and work on some analysis**
  + **think they would get really good field experience**

**Board Discussion:**

* **had mixed feelings**
* **think he has few follow up questions such as a more thorough timeline**
* **glad that he haas fiscal sponsor situated**
* **whats the likelihood of a third expedition**
* **really big ask and worry that only option for reducing funding is volunteering his time**
* **think there is a learning curve and the have overcome barriers but share some hesitations**

*MOTION/SECOND: Ethan/Austen*

*Motion language: motion to table discussion for CF-202201-01416*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

**Project Title:** CF-202201-01403 | Investigating effects of grazing management on root growth and soil carbon stocks in coastal grasslands

**Sponsoring Org:** Earth Research Institute

**Project Leader:** Jacob Weverka

**Summary:**

In this proposal, I aim to investigate how grazing management influences grassland soil organic carbon via changes in plant root growth. Coastal grassland soils store significant amounts of organic carbon. Changes in soil carbon stocks can cause soil to become a carbon source or sink to the atmosphere, thereby exacerbating or mitigating the problem of greenhouse gas-induced global warming. Furthermore, soils with more organic carbon are typically more productive, more stable, and have higher water holding capacities. Because many such grasslands are often grazed by cattle and livestock, it is important to understand the effects of grazing management on soil carbon stocks. If grazing management is an effective tool for managing soil organic carbon, then it can be leveraged to provide mutual benefits for ranching, ecosystem health, and the climate.

**Presentation Notes:**

* **Austen recuses himself**
* **soil stores carbon which is really important**
* **more carbon in soil than in all the plants of the world and the whole atmosphere combined**
* **fluxes of carbon in and out of soil**
* **fluxes are far greater than what humans are emitting**
* **small changes of carbon in soil can affect a lot**
* **soil carbon is mostly dead plants and dead microbes**
* **carbon is important for soil health**
* **grazing can be a healthy part of our landscapes**
* **california grasslands can be a healthy part of the landscapes** 
  + **based on intensity, frequency, duration, existing plant community, climate etc**
* **native perennial grasses is what the ecosystem used to be**
* **heard that grasses grow more roots when they are grazed**
* **but is that true of all grass species, do roots always translate to more carbon sequestration**
* **can we use grazing for conservation**
* **will look at two possible mechanisms**
* **in greenhouse- looking at how root responses to herbivory levels, plant species/ life history strategy**
* **do respondes affect soil carbon**
* **simulate grazing on grassland plots**
* **do responses depend on plant community**
* **changes within/ between years**
* **same treatments in each experiment**
* **the greenhouse experiment will look at how individual plants respond to grazing**
* **compare response of different plants**
* **native perennial and exotic annual**
* **will grow in clear-sided pots** 
  + **will measure root growth/death**
* **will intend to harvest biomass to see how much carbon mass and measure differences in soil microbial activity**
  + **substrate induced respiration**
  + **water extractable organic carbon**
* **how does the plant community respond to grazing within years, across years**
* **how does the function of ecosystem affect species composition**
* **at sedgwick reserve**
* **Minirhizotron-root growth/turnover**
* **will get really detailed, time sensitive root growth across the year**
* **roots are generally hard to observe but this will allow them to gather really good data**
* **will measure differences in soil microbial**
* **experiments on short time scale**
* **carbon changes really slowly**
* **but can measure active microbial biomass and total microbial biomass**
* **asking for supplies with the minirhizotron is the most expensive**
* **asking for funding for internships**
* **and field work costs**
* **will create opportunity for environmental and human benefits**
* **can help inform coastal management**

**Board Questions:**

* **the most expensive thing on your budget is the minirhizotron, could you talk about the instruments life beyond your project**
  + **think it would live in lab beyond scope of project**
  + **install clear tubes in the field and camera system is bulk of expense**
  + **definitely opportunity that other people could use the camera system**
  + **should last for years as long as they can get the tubes**
* **if we were unable to fund that equipment, is there any other techniques you could use to make it a viable project** 
  + **asked for it because it is the most viable option**
  + **the other methods cannot include depth of soil only growth**
  + **tried to reach out to engineering student groups if there is any interest of building machine in house**
  + **there are ways but the best option available is the Minirhizotron**
* **could you elaborate on restoration and this project**
  + **restoration traditionally of plants looks like growing plants and planting them onto landscapes**
  + **the way he sees it is that plants are going to depend on context of how they are growing**
  + **the same idea applies to the warming climate and rainfall regime**
  + **carbon storage is most meaningful when you do it across a landscape**
  + **you can only take the restoration so far**
  + **doing restoration in one acre and how you would do it across the watershed you cannot do it**
  + **thinking about grazing as a restoration tool is something worth looking into**
* **could you speak to experience with mentoring interns** 
  + **love mentoring undergrads- have had 5 undergrads work for him**
  + **3 working in lab right now**
  + **do think it makes sense to pay interns**

**Board Discussion:**

* **like project-think its useful**
* **right now the instrument would just be used for his project with no plans to be used beyond that**
* **concerned for buying this really expensive instrument for just one project**
* **also don’t want to fund this in perpetuity**
* **also think he wrote this grant to get funding for the instrument and added interns to make us happy**

*MOTION/SECOND: Ethan/Mykala*

*Motion language: motion to table discussion for CF-202201-01403*

*ACTION: Consent*

*Additional approval required: YES (Senate)*

**ADJOURNMENT AT PM**

*MOTION/SECOND: Ethan/Erika*

*Motion language: Motion to adjourn at 9:41 PM*

*ACTION: Consent*

*Additional approval required: NO*