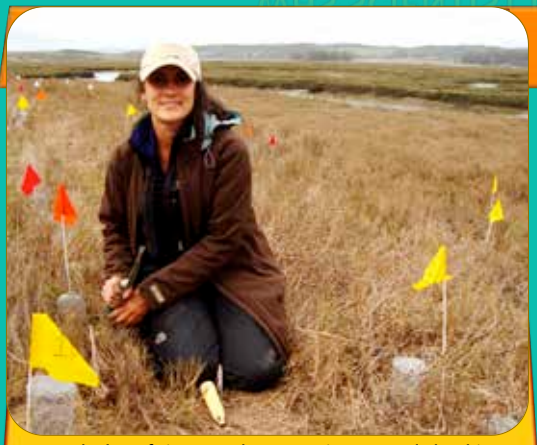
Santa Cruz-Watsonville Inquiry-Based Learning in Environmental Sciences

NSF GK-12

...PRESENTS:

CARLA FRESQUEZ

WHS SCIENTIST IN RESIDENCE, 2012-2013



I spend a lot of time outdoors setting up and checking my experiments. Here I plant over 800 plants into the marsh to figure out why these plants are limited to such a tiny area and whether they can live outside of this small zone.

Some stuff about me:

- **Age:** 28
- **Where I grew up:** Los Angeles, California
- **High School:** Flintridge Sacred Heart Academy
- **Favorite subjects in high school:** Biology
- **College (undergraduate):** Washington University in St. Louis
- **Some of my favorite things:** Camping, cooking, and traveling are my three favorite things!
- **Something weird about me:** When I was young my parents would send our television set on "summer vacation" by hiding it in the garage! I think this is how I learned to love reading and being outdoors as much as I do. Thanks Mom & Dad!
- **What I think or do when I get frustrated:** Life can be hard! It's easy to get discouraged when things don't go they way we plan. My advice is to take a break to chill out and think about the things that *are* working out. Dwelling on the good stuff will give you the patience and strength to go back and tackle the not-so-good stuff!

The data from this *Outplant Experiment* has shown that these plants *can* live outside of their natural range. Now I have to figure out why!

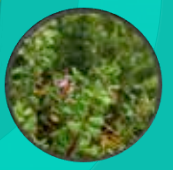
Saltgrass Flower (*Distichlis spicata*)

These plants are only found in the "high marsh-upland ecotone", which is the transition zone between the tidal salt marsh and the upland plant community.

They are limited to an area that is only 50 centimeters (20 inches).

Fleshy Jaumea (Jaumea carnosa)

Fat Hen (*Atriplex triangularis*)



Alkali Heath ((*Frankenia Salina*)

What I study

I study a community of salt marsh wetland plants that live in the high marsh-upland ecotone. This ecotone is the only place where these plants are found and I am trying to figure out if they are limited to this area because of interactions with other plants or animals or if they simply can't tolerate the environmental conditions outside of this ecotone.

Understanding what types of factors determine where a species is found is one of the first steps toward understanding how to protect and restore them. Over 90% of California's wetland plant communities have disappeared already! Research like mine will not only help to figure out how to bring back what we've lost but also help us figure out how to deal with the losses that might happen as we deal with things like climate change and a growing human population.

This year will be my second year as a SCWIBLES fellow. I had so much fun doing science with WHS students that I'm back for more! science is more than what can be found in textbooks—it can be fun, exciting, and full of opportunities to learn about the world around us!

Supported by NSF GK-12 DGE-0947

http://scwibles.ucsc.edu