

## Science Bite

### The Help with Kelp

Lauren Bell, UCSC researcher, just ended her kelp project this week. She began with 3 different types of algae - *Macrocystis pyrifera* (MP) and 2 different understory kelp including *Saccharina nigripes* (SN). Each blade was trimmed to 10 cm measured from the attachment to the stipe. They were placed in containers that were controlled for temperature and pH. Her study is called a “factorial” study which means that algae was grown in 4 different conditions of current temperature and future temperature along with current pH and future pH. “Current” refers to 2020 values in Sitka Sound and “Future” refers to predicted 2100 values.

What are the 4 different conditions using combinations of temperatures and pH?  
Use the table below to help identify the 4 combinations:

Conditions	Current temp: 7° C	Future temp: 11° C
Current pH: 7.8		
Future pH: 7.4		

The attached photos show 2 different types of algae (MP and SN) that were grown in current temperature and future temperature. She did not change the pH for these samples, all were grown in pH 6.9.

Using the photos provided, how much did the algae grow in 34 days?

MP current temp \_\_\_\_\_ cm - 10 cm = \_\_\_\_\_ cm  
MP future temp \_\_\_\_\_ cm - 10 cm = \_\_\_\_\_ cm  
SN current temp \_\_\_\_\_ cm - 10 cm = \_\_\_\_\_ cm  
SN future temp \_\_\_\_\_ cm - 10 cm = \_\_\_\_\_ cm

What conclusions can you draw from this information?

How could Lauren test this hypothesis?