Kelp Crabs Eat Kelp. And Lots Else?

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Bull Kelp Forests – Ecologically Important Nearshore Habitats
(Possible) Kelp Consumers

Northern kelp crabs, *Pugettia producta*
Laboratory Feeding Experiments

Feeding Experiments
n=7-11

“Buffet-Style” choice

Controls
n=7-11
(same as number of crabs to allow random pairing for adjustment)
*P. producta* elects to eat bull kelp over other species of macroalgae.
Pugettia producta, the Northern Kelp Crab

Organism photos courtesy of Sound Water Stewards
Laboratory Feeding Experiments

Choice and No Choice “Pairwise” Comparisons

What crabs CAN eat: Paired No Choice Experiments

What crabs CHOOSE to eat: Paired Choice Experiments

*Nereocystis* stipe

*Nereocystis* blade
Do kelp crab preferences vary with bull kelp life stage?

No – blades preferred in both juvenile and adult feeding experiments
Do kelp crabs chose to consume bull kelp stipes or blades?

Blades preferred BUT can eat stipes – if offered ONLY stipes, prefer juvenile stipe to adult stipe.
Do kelp crabs eat *Sargassum*?

Photos by Kasey Cordova

YES – and lots of other foods too.
Do kelp crabs eat *Sargassum* if the morphology effect is removed?

Yes – and may even prefer to consume *Sargassum* “jello” over bull kelp “jello”?!?
How high are kelp crab densities in bull kelp beds?

It likely varies by where in the Salish Sea you are looking!
Northern kelp crabs eat:

• Bull kelp
  • Preferred over many other macroalgae in choice trials
  • Both adult and juvenile stages
  • Blades preferred

• Snails
  • Consumed in feeding experiments
  • Present in gut content analysis

• Sargassum
  • Consumed fresh (found in gut content analysis)
  • As “jello” (effect of morphology removed)
Future Directions

• Survey additional sites around the Salish Sea to quantify variation in kelp crab density and gut contents
  • Habitat and diet – match or mismatch?
    • *Nereocystis*/other kelp species
    • *Sargassum*

• Complete additional choice and no choice laboratory feeding experiments
  • “Jello” made with freeze-dried (not fresh) *Sargassum*
  • Intact fresh *Sargassum*
Questions?