

Regulations Governing Commercial Harvest of Wild Kelp and Algae

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Marine Resources Committee
Santa Rosa
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Proposed Regulatory Amendments

1. Bull kelp

- Statewide closure

2. Marine algae

- Remove human food restriction
- Establish harvest methods
- Establish annual harvest limits

3. Prohibit take in San Francisco Bay, Tomales Bay, Humboldt Bay and Crescent City Harbor



Proposed Regulatory Amendments (cont.)

4. Sea Palm

- Establish annual harvest limits and season, or closure
- Establish harvest methods

5. Modify Commercial Kelp Harvesting License

- Statutory compliance

6. Modify Harvester's Monthly Reports

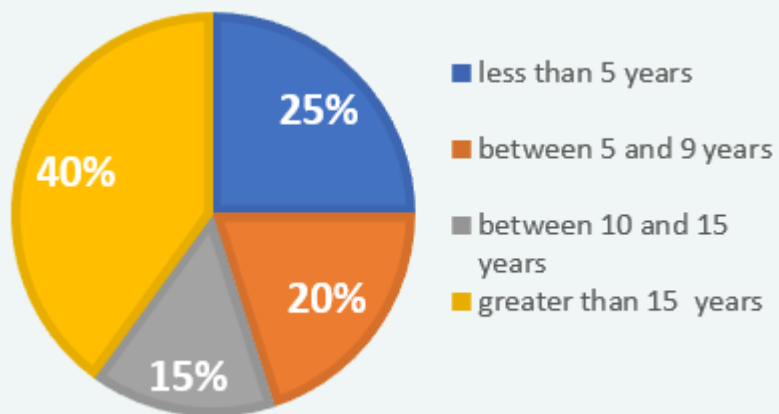
- Include specific harvest location
- Include number of harvesters
- Streamline report design

7. Overall Cleanup

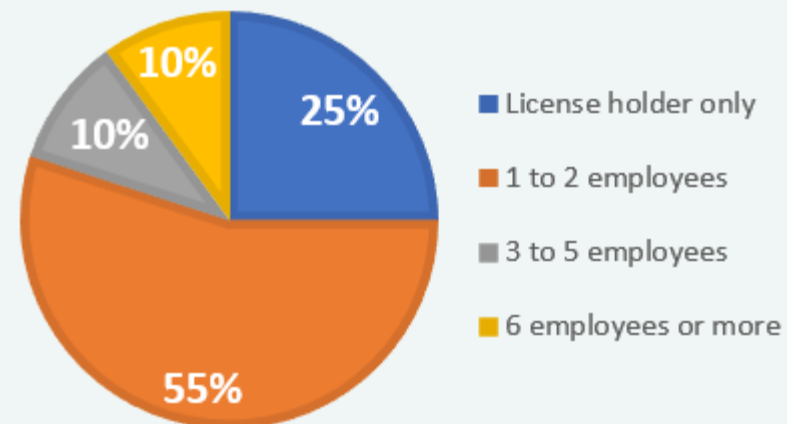


Commercial Harvester Survey Results

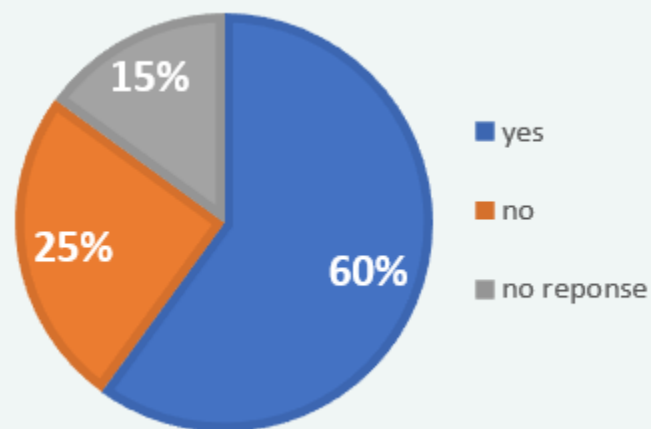
Number of years harvesting?



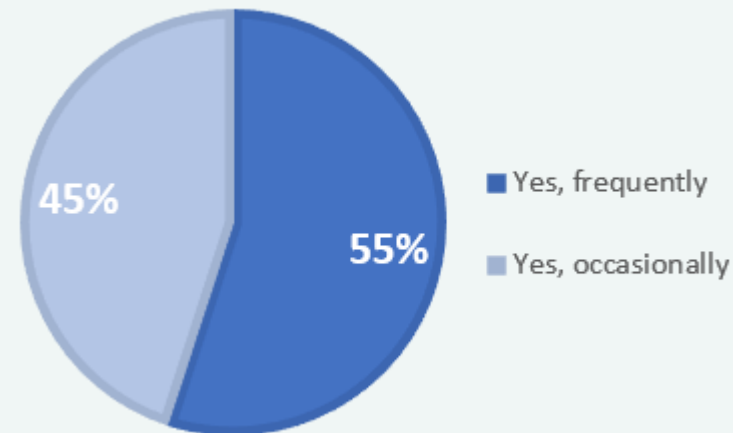
Number of employees?



Limit the number of licenses?



Return to the same site for harvest?





Proposed Harvest Limits – Giant Kelp

Alga	Average Annual Harvest 2009-18*	Survey Responses*	Proposed Annual Fishery Limit*
Giant Kelp (<i>Macrocystis pyrifera</i>)	3,500	3,062	3,500

*tons wet weight





Proposed Harvest Limits – Wakame, Kombu, Nori

Alga/Algae	Average Annual Harvest 2009-18*	Survey Responses*	Proposed Annual Fishery Limit*
Wakame (<i>Alaria</i> spp.)	9,761	9,001	9,500
Kombu (<i>Laminaria</i> spp.)	11,944	13,651	11,500
Bull Kelp (<i>Nereocystis luetkeana</i>)	4,981	6,400	Close Harvest
Nori (<i>Porphyra</i> spp., <i>Pyropia</i> spp.)	4,070	6,821	4,000

*lbs wet weight



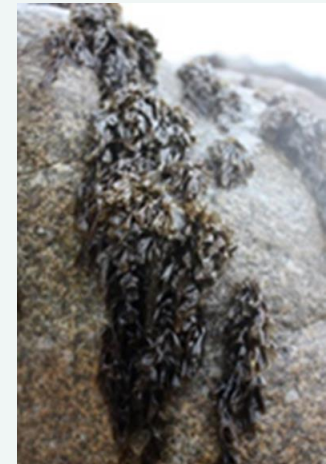
Wakame



Kombu



Bull Kelp



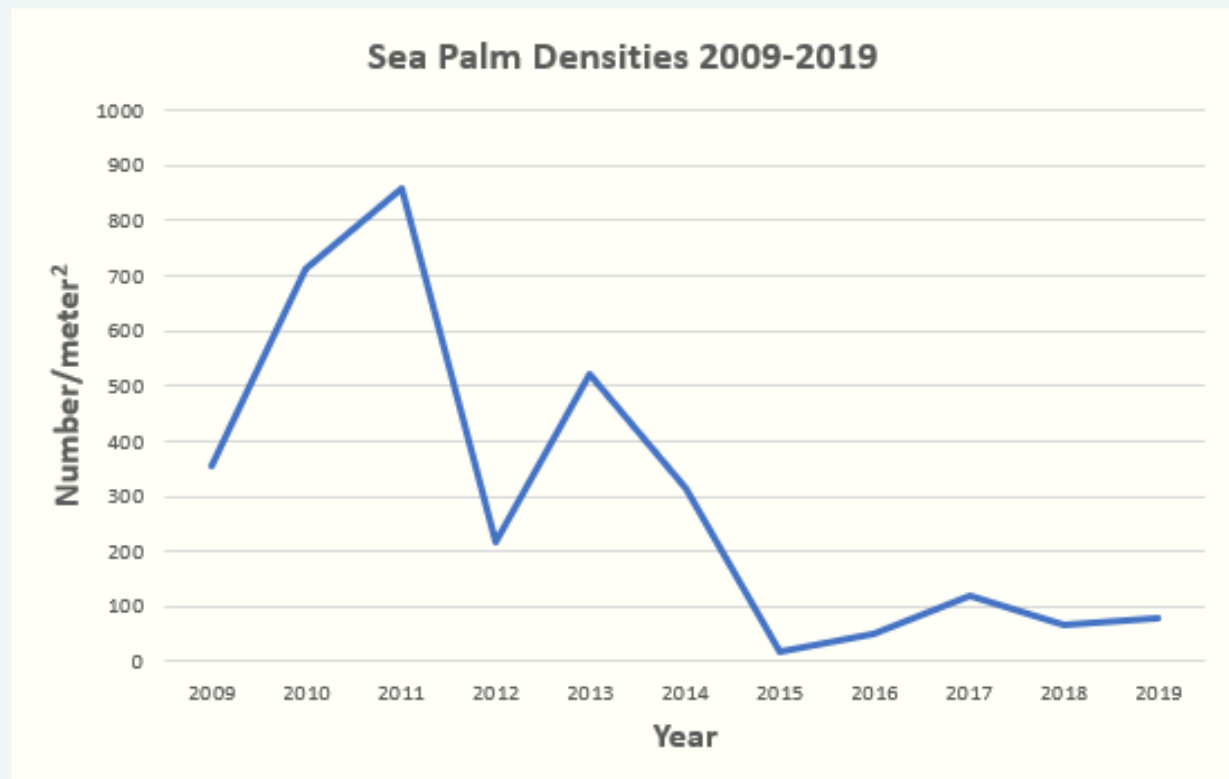
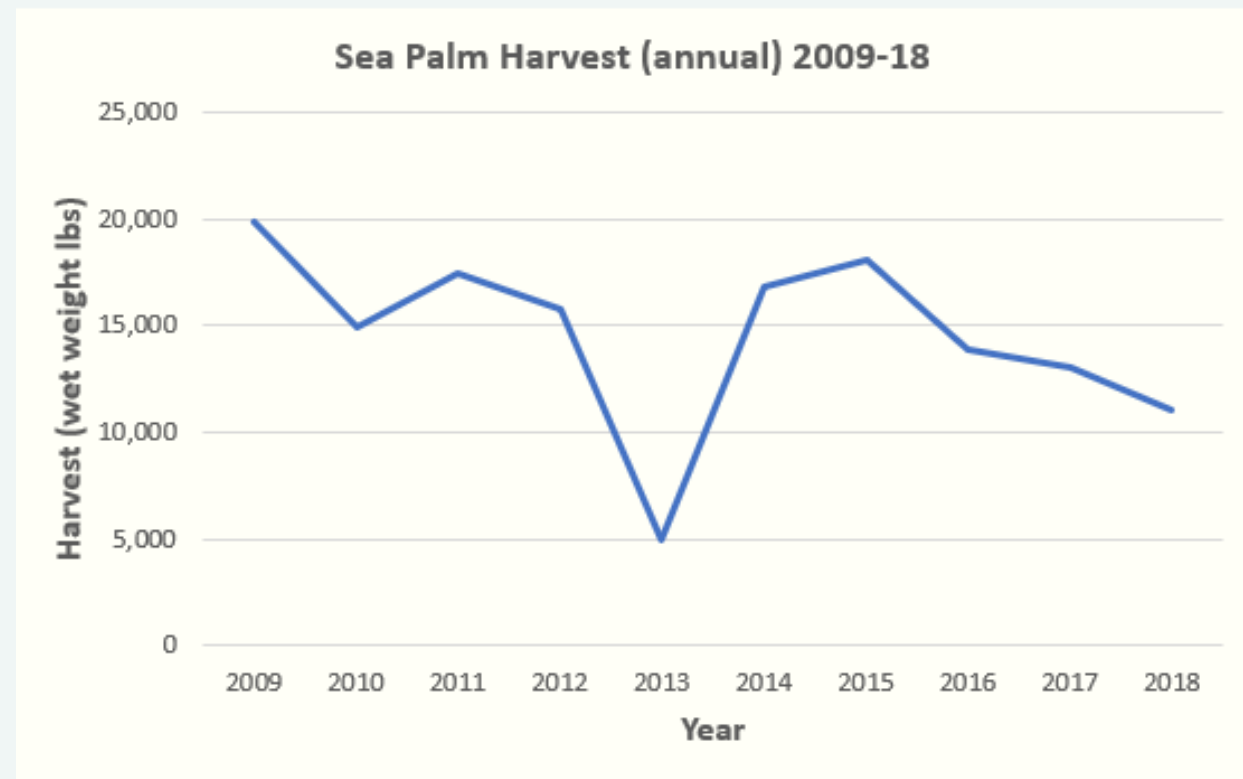
Nori



Proposed Harvest Limits and Season – Sea Palm

Alga	Average Annual Harvest 2009-18*	April-May Average Annual Harvest 2009-18*	Survey Responses*	PROPOSED OPTION 1: April-May Annual Fishery Limit*	PROPOSED OPTION 2
Sea Palm (<i>Postelsia palmaeformis</i>)	14,593	1,719	9,341	1,700	close harvest

*lbs wet weight



Date Source: Multi-Agency Rocky Intertidal Network



Proposed Harvest Limits – Other Algae

Algae	Average Annual Harvest 2009-18*	Survey Responses*	Proposed Annual Fishery Limit*
Brown (Phaeophyta)	3,470	8,801	3,000
Red (Rhodophyta)	4,254	9,715	4,000
Green (Chlorophyta)	555	251	500

*lbs wet weight



Outreach

2013:

- Letters to industry on regulatory process

2015 and 2016:

- Marine Resource Committee (MRC) presentations

2017:

- Letters to industry, Tribes, and interested stakeholders
- Tribal Committee (TC) presentation

2018:

- MRC and TC presentations

2019:

- MRC and TC presentations
- Web-based commercial harvester survey

2020:

- MRC and TC presentations



Next Steps

March-May 2020: Engage in outreach with interested Tribes and Stakeholders

August 2020: Notice Meeting

October 2020: Discussion/Adoption Meeting

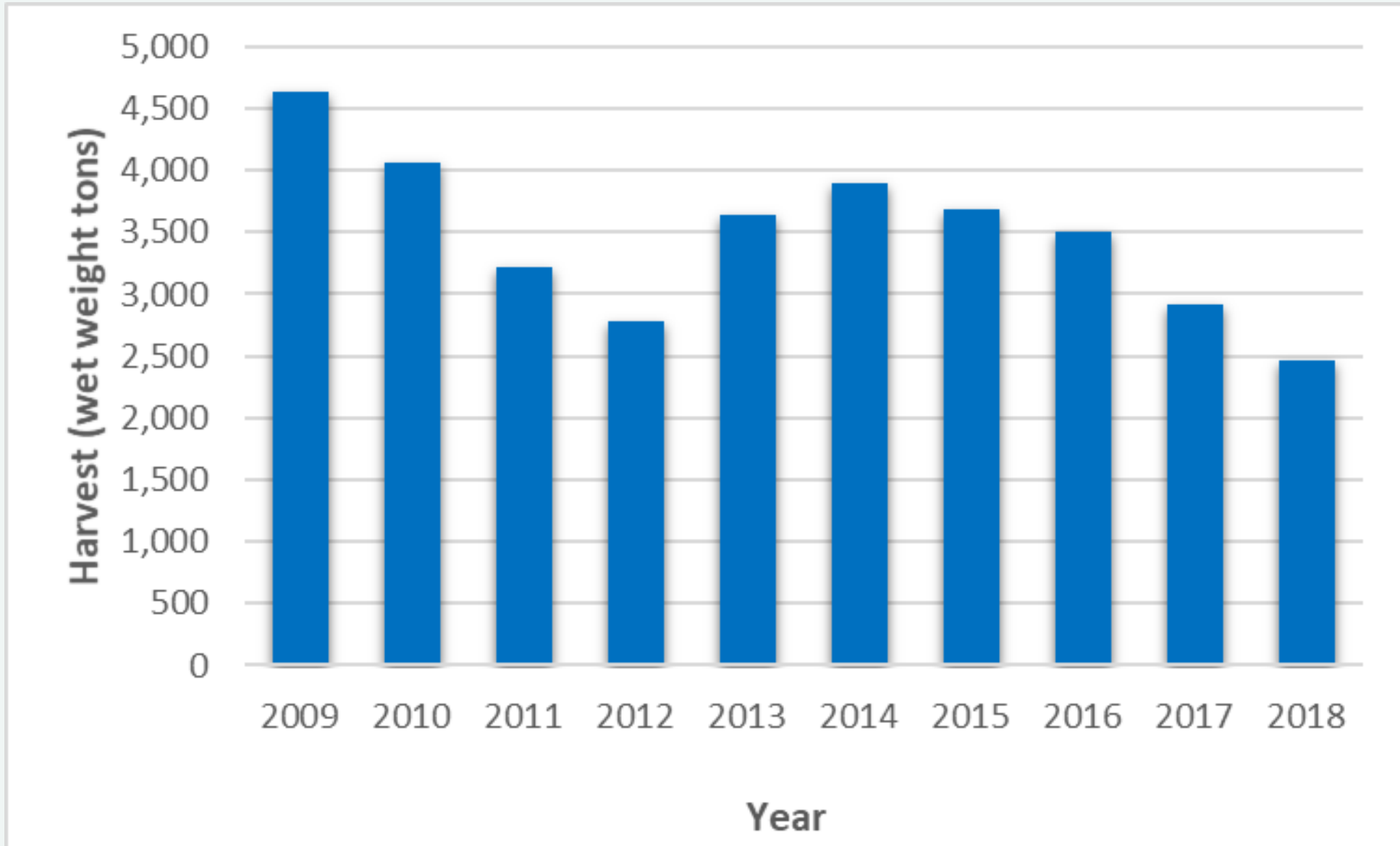


Thank you

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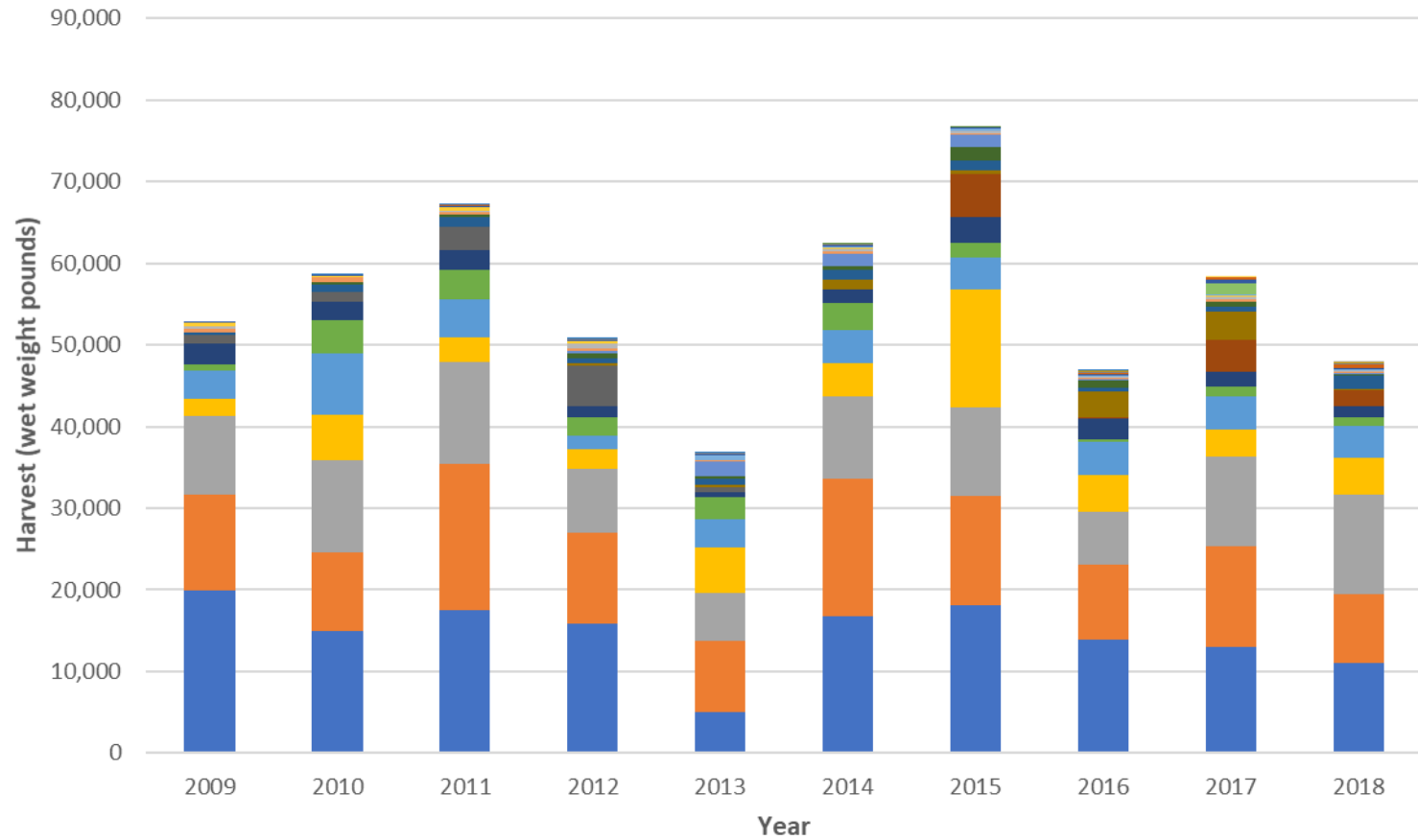


Commercial Kelp Harvest 2009-18





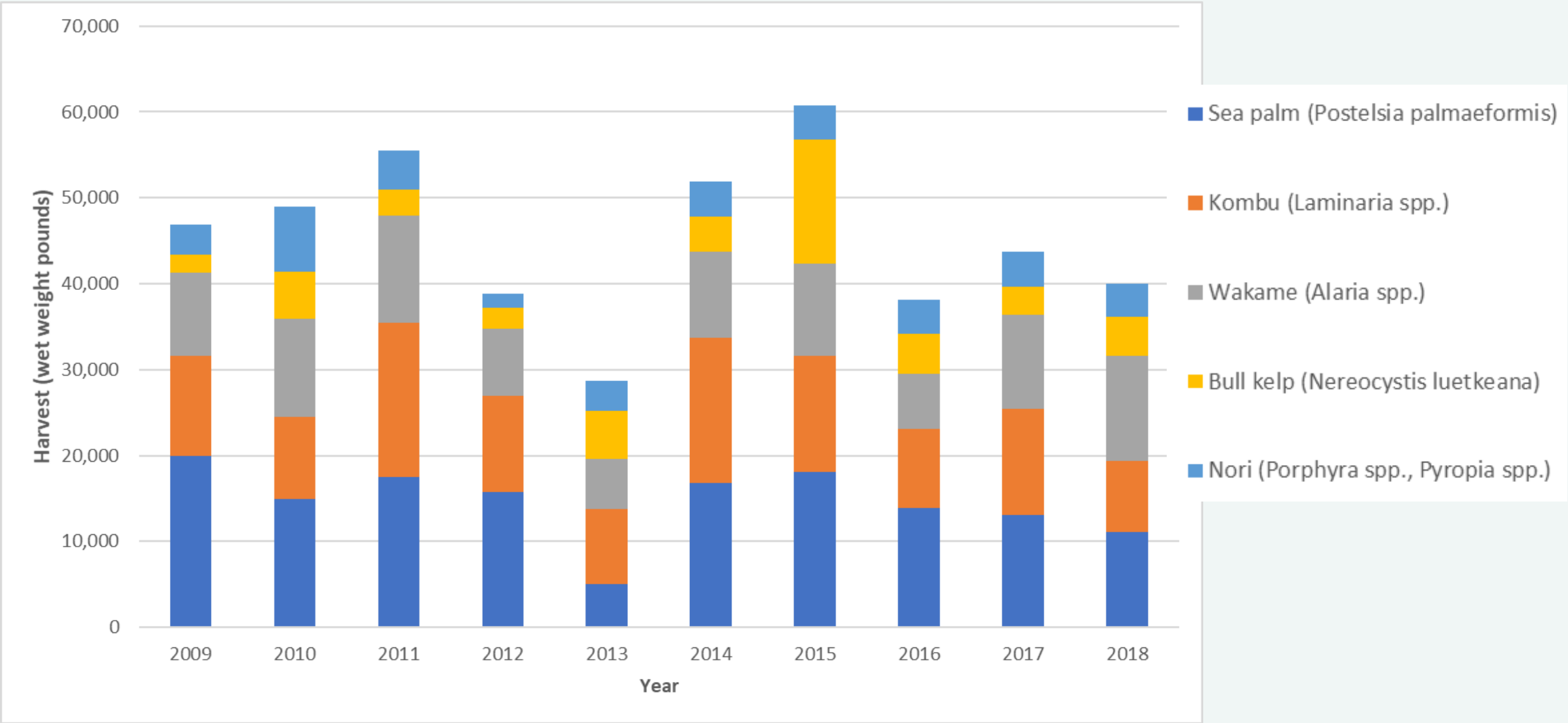
Commercial Edible Seaweed Harvest 2009-18



- Sea palm (*Postelsia palmaeformis*)
- Kombu (*Laminaria* spp.)
- Wakame (*Alaria* spp.)
- Bull kelp (*Nereocystis luetkeana*)
- Nori (*Porphyra* spp., *Pyropia* spp.)
- Turkish washcloth, grapestone (*Mastocarpus* spp.)
- Bladderwrack (*Fucus* spp.)
- Giant kelp (*Macrocystis pyrifera*)
- Gelidium spp.
- Turkish towel (*Chondracanthus* spp.)
- Sea fern, bladder chain kelp (*Stephanocystis osmundacea*, *Cystoseira osmundacea*)
- Sea lettuce (*Ulva* spp.)
- Botryocladia spp.
- Mazzaella spp.
- Sweet kombu, sea cabbage (*Saccharina sessilis*, *Hedophyllum sessile*)
- Ocean ribbons (*Lessionopsis littoralis*)
- Gracilaria spp.
- Cryptopleura spp.
- Pacific dulse (*Palmaria mollis*)
- Pelvetiopsis spp.
- Feather boa kelp (*Egregia menziesii*)
- Mermaids hair (*Polysiphonia* spp.)
- Iridia spp.
- Dead man's fingers (*Codium fragile*)
- Rhodymenia pacifica
- Dilsea spp.
- Callophyllis spp.
- Sarcodiotheca spp.
- Endocladia spp.
- Prionitis spp.

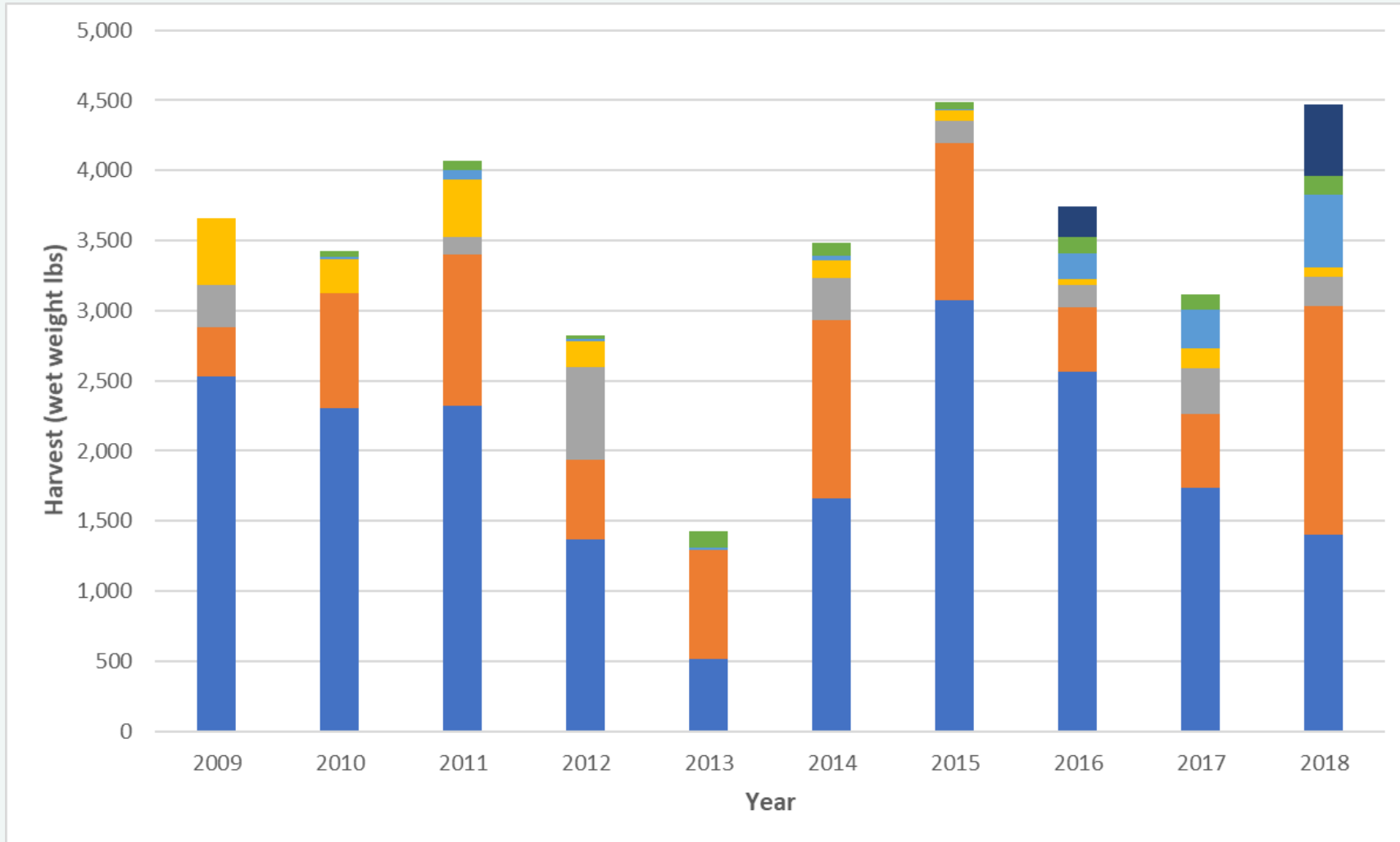


Highlighted Edible Seaweed Harvested 2009-18





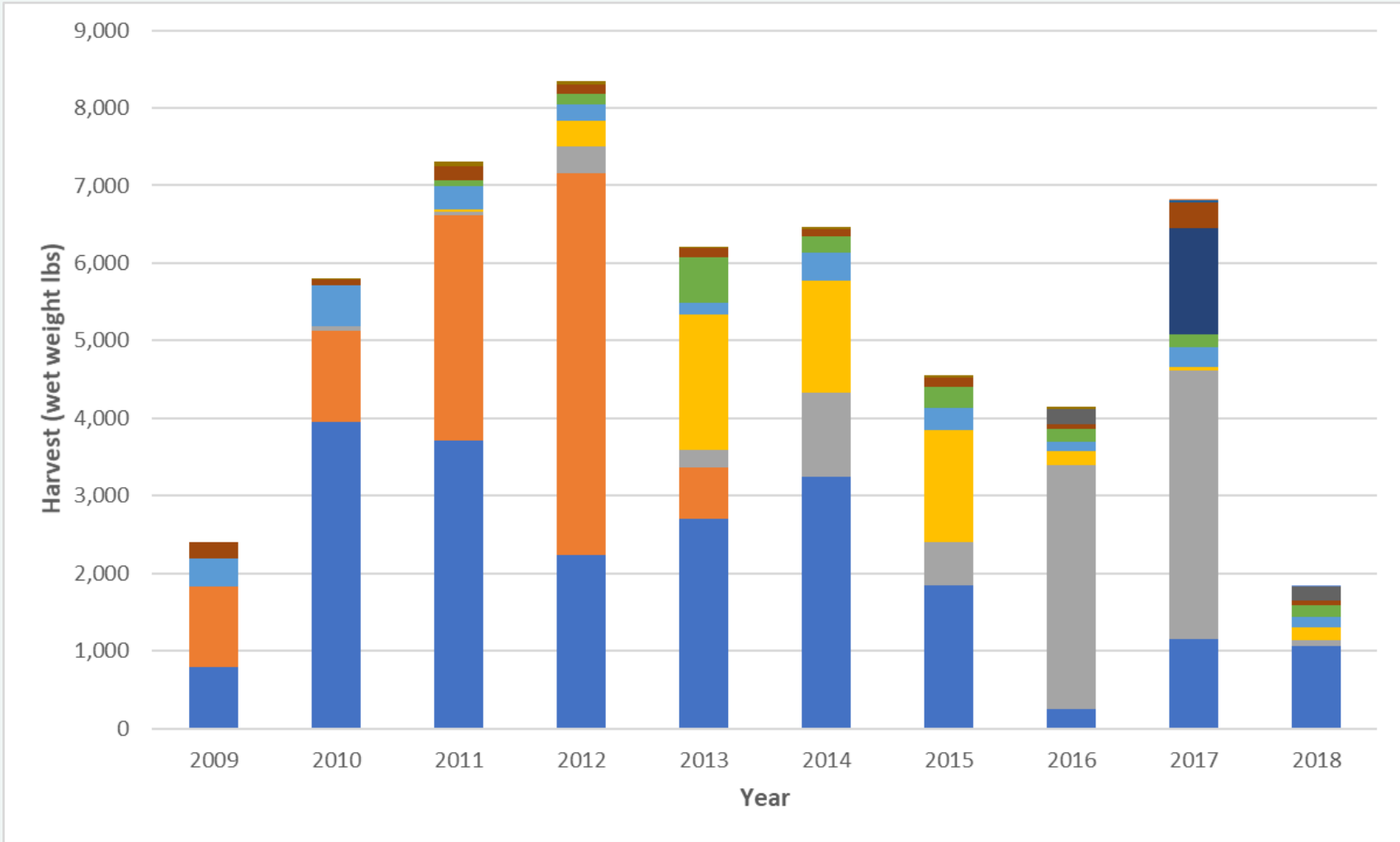
Commercial Brown (Phaeophyta) Harvest 2009-18



- Bladderwrack (*Fucus* spp.)
- Sea fern, bladder chain kelp (*Stephanocystis osmundacea*, *Cystoseira osmundacea*)
- Sweet kombu, sea cabbage (*Saccharina sessilis*, *Hedophyllum sessile*)
- Ocean ribbons (*Lessionopsis littoralis*)
- Pelvetiopsis spp.
- Feather boa kelp (*Egregia menziesii*)
- Sargassum spp.



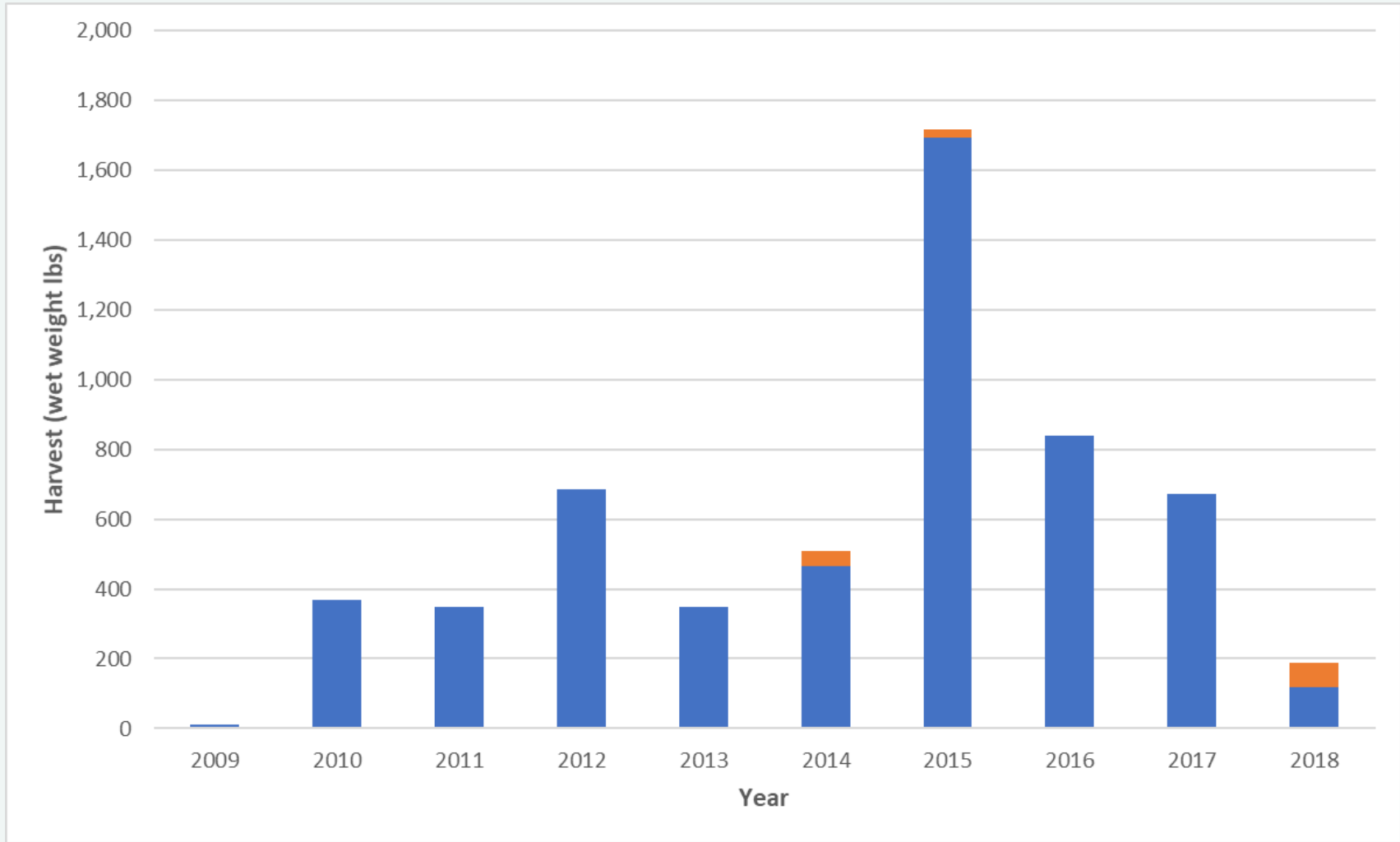
Commercial Red (Rhodophyta) Harvest 2009-18



- Turkish washcloth, grapestone (*Mastocarpus* spp.)
- *Gelidium* spp.
- Turkish towel (*Chondracanthus* spp.)
- *Botryocladia* spp.
- *Mazzaella* spp.
- *Gracilaria* spp.
- *Cryptopleura* spp.
- Pacific dulse (*Palmaria mollis*)
- Mermaids hair (*Polysiphonia* spp.)
- *Iridia* spp.
- *Rhodymenia pacifica*
- *Dilsea* spp.
- *Callophyllis* spp.
- *Sarcodiotheca* spp.
- *Prionitis* spp.
- *Endocladia* spp.



Commercial Green (Chlorophyta) Harvest 2009-18



- Dead man's fingers (*Codium fragile*)
- Sea lettuce (*Ulva* spp.)