Crab Team Coastal Monitoring Site Summary 2025

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Summary

This is an visualized summary of 2025 Washington Sea Grant Crab Team data from monitoring sites in coastal estuaries. Ten Crab Team sites were monitored in this geography in 2025, having discontinued monitoring at *Tsoo Yess, 611* (tinyurl.com/wagreencrab). All sites were surveyed for European green crabs (CAMA) and associated intertidal and shallow subtidal communities using Fukui and minnow (1" opening) traps and via molt surveys from April through September as per standard WSG monitoring protocols.

Green crabs were detected at all coastal network sites in 2025, including for the first time at Dohman Creek in the southern (up-estuary) portion of Willapa Bay, marking a notable expansion in network-wide presence. Tokeland, Nahcotta, Ocean Shores, Brady's Oyster, and Stackpole exhibited the highest cumulative captures, though relative dominance of Tokeland and Nahcotta shifted compared to previous years as CPUE increased at several other sites. Hand captures were rare overall, contrasting with elevated hand-capture rates observed at some sites in 2024.

Analyses of CAMA size indicate widespread recruitment across the coastal network, with young-of-year (YOY) crabs detected at all sites as molts and at most sites as live captures, particularly in late summer and early fall (August – September). Sites near estuary mouths showed the strongest YOY signals, while recruitment at Nahcotta and Grays Harbor National Wildlife Refuge represented a departure from historical patterns. Several sites exhibited broad size distributions, suggesting established populations of multiple year-classes with ongoing recruitment, while increasing numbers of large crabs at other sites may indicate insufficient trapping pressure to cull populations or seasonal patterns of emigration from intertidal monitoring areas. From a protocol perspective, capture of small YOY in minnow traps (1" openings) highlights the value of this gear type in sampling a unique population segment.

Community analyses revealed a negative relationship between green crab CPUE and overall organism abundance, though species richness showed no clear association with green crab density in 2025. Seasonal community composition varied by site and was driven by shifts among dominant taxa. Collectively, the 2025 data point to continued spread, strong late-season recruitment, and increasing management complexity across Washington's coastal green crab monitoring network.

Importantly, patterns evident from the monitoring network largely reflect observations by other trapping groups working in coastal jurisdictions. While total catches may differ among efforts, relative magnitude of CPUE across months is largely consistent, as are demographic patterns in year-class strength. The Crab Team coastal monitoring sites thus represent a powerful, complementary dataset to corroborate other efforts that are not standardized across space and time.

2025 Hand capture totals, by site:

Hand captures made by monitors during sampling efforts are typically rare but can point to large population size or abundant recruitment. This year, hand captures did not make up a significant number of detections in the network this season, unlike in 2024 when at some sites, notably *Wa'atch, site 604*, the majority of captures were made with this method instead of traps.

Makah Bay
* *Wa'atch, site 604*: **3**

Grays Harbor
* *Ocean Shores, Site 603*: **0**
* *Brady's Oyster, site 605*: **0**
* *Grays Harbor National Wildlife Refuge (NWR), site 606*: **0**

Willapa Bay
* *Stackpole, site 600*: **2**
* *Nahcotta, site 601*: **0**
* *Tokeland, site 602*: **2**
* *Cutthroat Creek (Willapa NWR), site 609*: **0**
* *Dohman Creek (Willapa NWR), site 610*: **0**
* *Newskah, site 612*: **0**

Figure 1. Cumulative Number of CAMA Captured

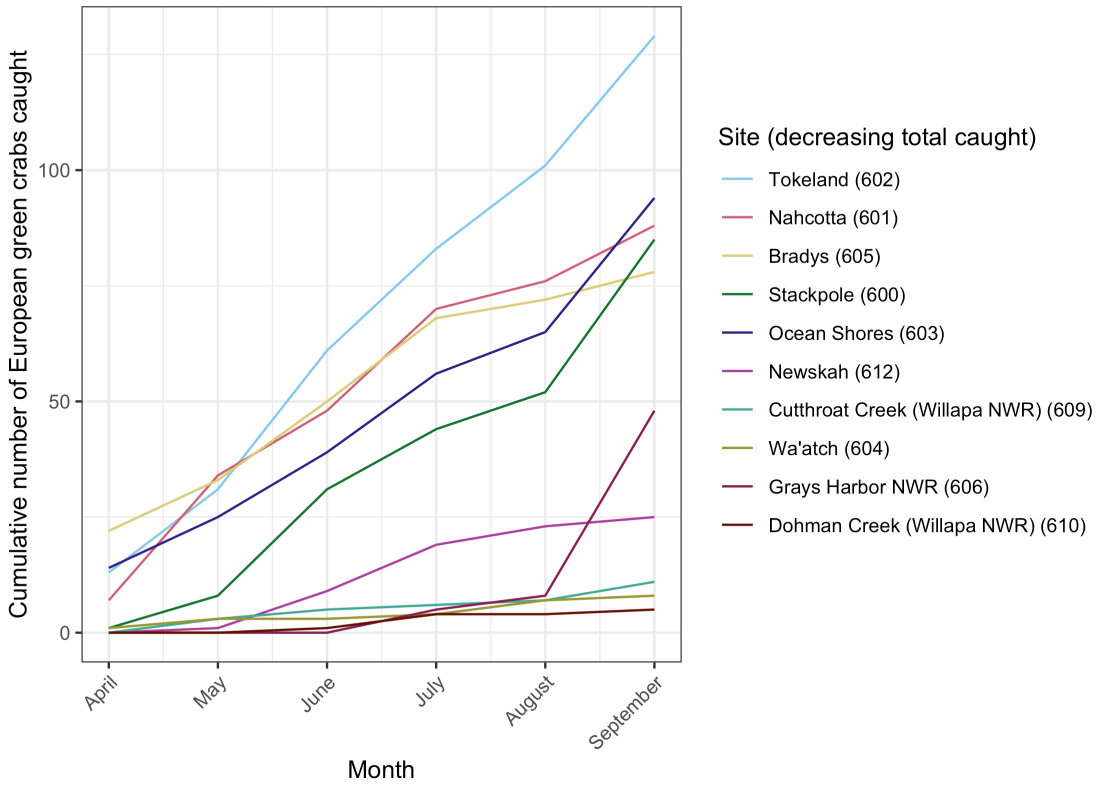

Figure 1 shows the cumulative total number of CAMA captured in traps at each of the sites across the 2025 season. Tokeland captured the most CAMA (129), with consistently high captures throughout the season peaking in June (30). Nahcotta had the second highest total (88) with relatively consistent captures over the season except for lower rates in April (7) and August (6). Brady's Oyster had the highest early season captures with 22 in April alone and a season total of 78. Ocean Shores (94) and Stackpole (85) both showed high capture rates in September (29 and 33 respectively). Similarly Grays Harbor National Wildlife Refuge (GHNWR) 40 CAMA in September after 8 in August and zero until then this season. A high season total that was anomalous over the entire history of this site. Newskah captured 25 over the season, largely in the late season after only 1 capture across April and May combined. Cutthroat Creek and Wa'atch continued to report among the lowest catch rates, with 11 and 8 respectively. This was the first season when all coastal sites captured green crab in traps during monthly monitoring, including for the first time *Dohman Creek, 610*, which captured 5 over the course of this season.

Figure 2. CPUE of CAMA Across Sites and Years

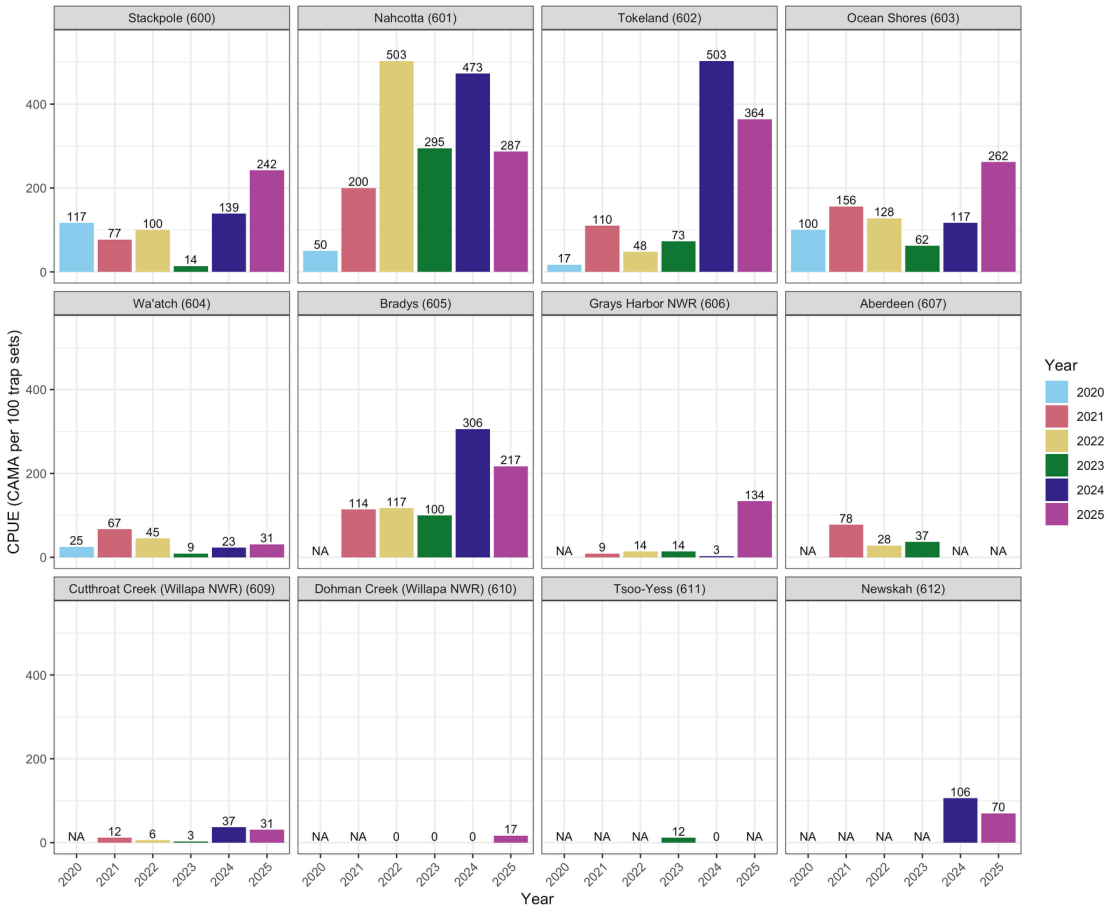

Figure 2 shows catch per unit effort of green crabs (CPUE, per 100 trap sets) across all coastal sites since coastal Crab Team monitoring was piloted in this region in 2020. Note that in 2020, sites were sampled in August and September only. The number above each bar indicates the CPUE value for that site and year, and "NA" indicates the site was not sampled during that year. As in previous years, Tokeland and Nahcotta continued to observe the highest catch rates among coastal monitoring sites. That lead over other sites narrowed in 2025, however, reflecting both a decrease in catch rate at Tokeland and Nahcotta compared to 2024, as well as an increase this year at several other sites (e.g. Stackpole, Ocean Shores, GHNWR).

Figure 3. EGC Size Demographics in 2025

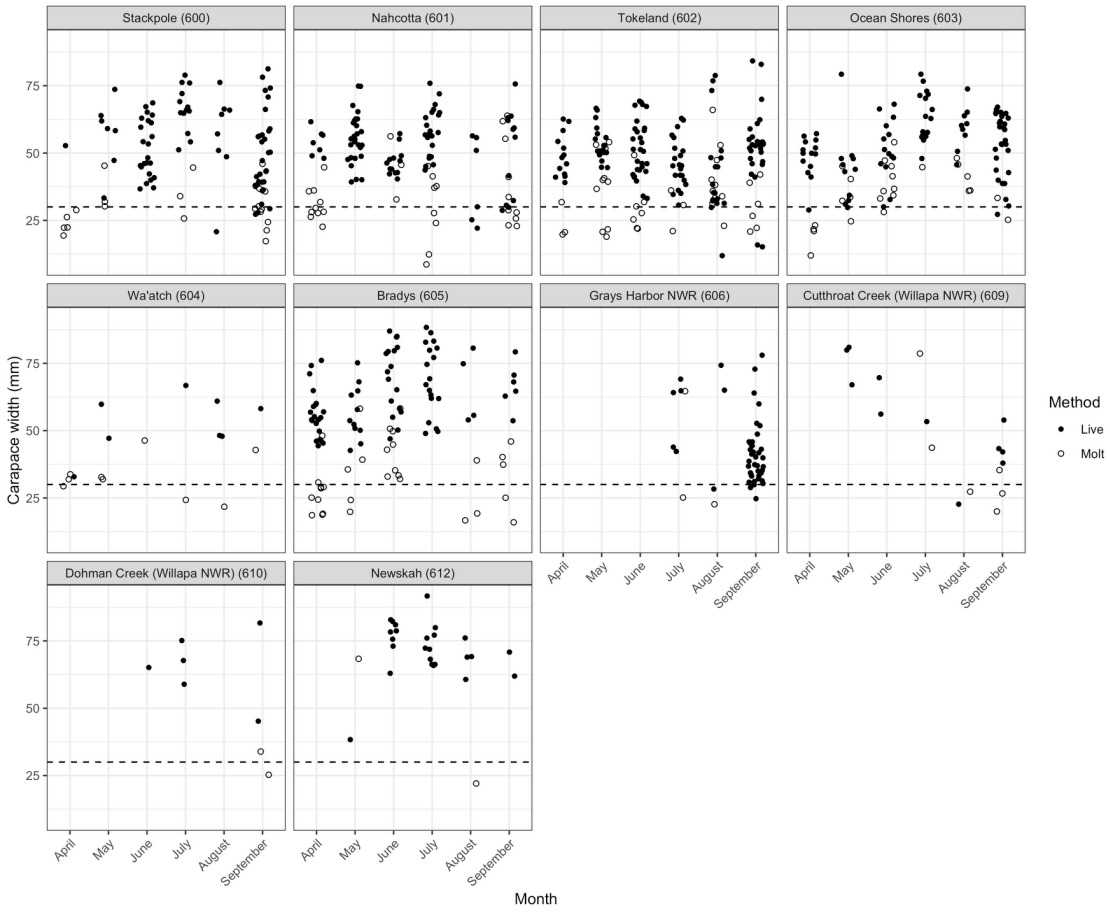

Figure 3 shows the sizes of live CAMA trapped (filled points) and green crab molts or dead crabs (empty points) recorded at each site over the 2025 season. The dotted line shows a size below which any crab is considered young-of-year (YOY, carapace width < 30 mm). Note, however, that the 30mm cutoff used here is a conservative estimate since late in the season (July – September), YOY crabs can reach up to 55mm. Thus, any crab under 30mm at any time of year is confidently considered a YOY, but by midsummer, a more nuanced cohort analysis is needed to determine which crabs are YOY.

Brady's Oyster, Tokeland, and Newskah captured the largest (oldest) crabs. Meanwhile, Nahcotta, a site that has been trapped extensively in recent years, recorded smaller crabs on average and fewer crabs in the >70mm size group relative to the overall catch. This could be an indication of "crabbing down" the population size.

The sites with the greatest observations of YOY are typically closest to the mouths of estuaries (e.g. Tokeland, Stackpole, Ocean Shores). This year two sites that typically do not see strong recruitment (successful settling and survival of YOY) also trapped YOY (GHNWR, Nahcotta). The presence of YOY in traps as an end of season pulse (August and September) suggests a strong recruitment over the previous winter. By contrast, in 2024, a few sites also had strong early season (May) recruitment, a signal which is mostly seen as molts in 2025. New this year, all sites found at least some signs of YOY as molts, though a smaller

number of YOY could also be found throughout the remainder of the season. Additional captures by hand often included YOY, but without consistent measurements of those retrained crabs, we have not included them here.

Figure 4. CAMA Size Demographics Across Years

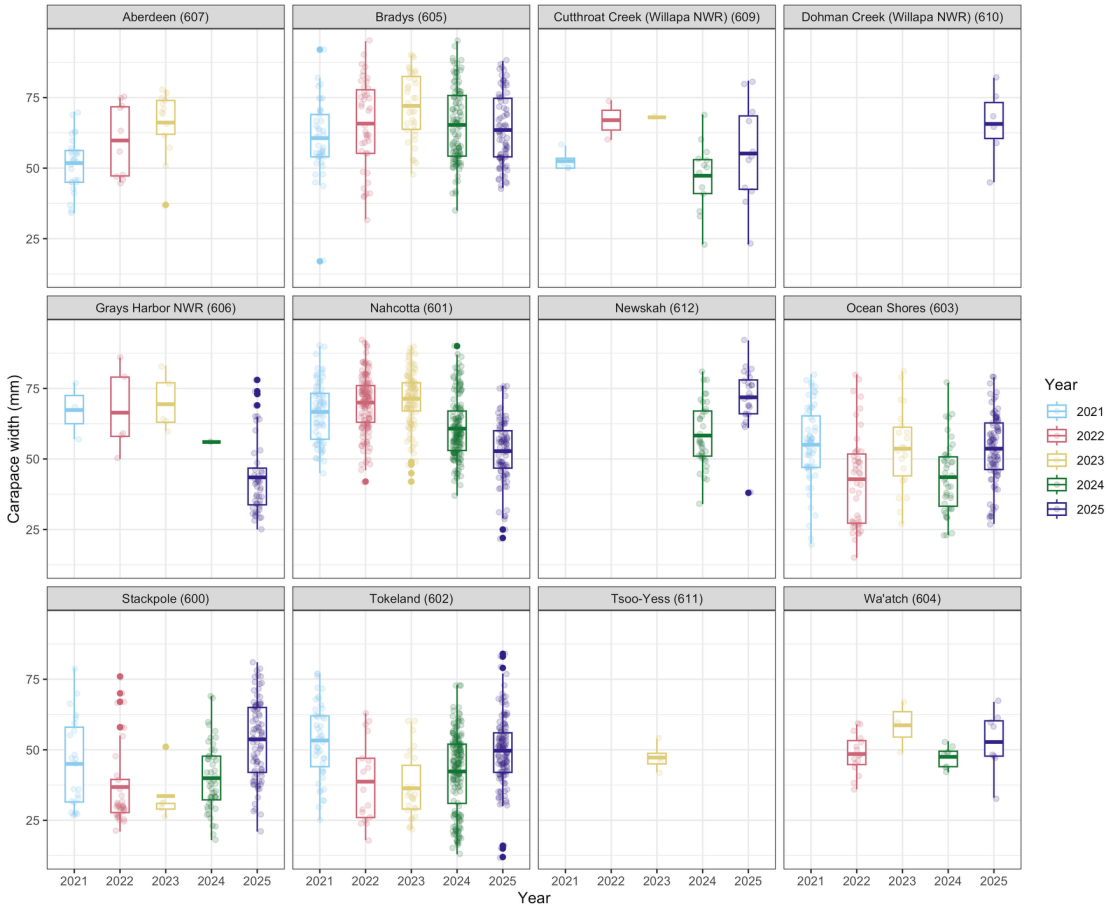

Figure 4 shows box plots of CAMA sizes from 2021 to 2025. The thick horizontal line in the middle of each box represents the median carapace width, with each side of each box sized to contain 25% of the values. In 2021, the Wa'atch was sampled in April only and therefore sizes are not included for that year. This year, CAMA sizes were most varied at Stackpole, Nahcotta, Tokeland, Ocean Shores, Brady's Oyster and Cutthroat Creek, which is largely similar to trends seen in 2024. A broad span of CAMA sizes can be an indication of more established populations that continue to be reinforced by recruitment, particularly when consistently so across seasons. A change in number of large crabs at a site can relate to control efforts; a decrease may signal many crabs were removed, while an increase could suggest these crabs were "missed" by trapping. For example, the increase in number and maximum size of large crabs at sites like Stackpole, Newskah, Cutthroat, and Tokeland might mean those sites need heavier trapping pressure. Significant recruitment (i.e. increase in the number of small crabs) was a relatively new observation at Nahcotta and GHNWR this year.

Figure 5. Differences in Community Metrics Across Sites in 2025

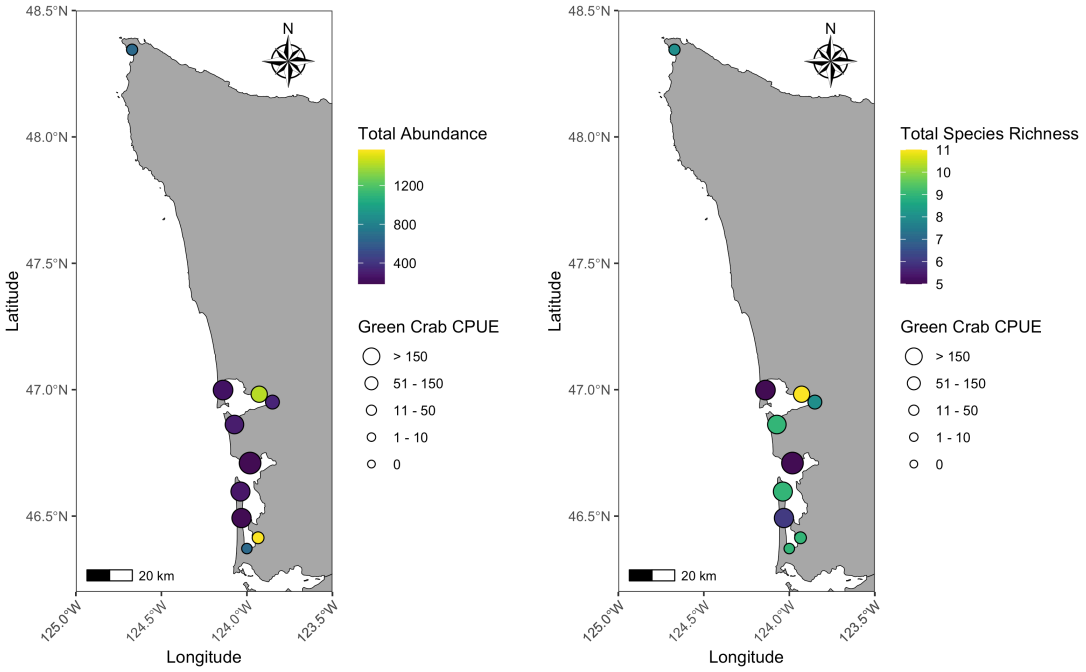

Figure 5 is a map of monitoring sites where size of the circle reflects the CAMA CPUE as size of circle while the color represents total number of animals trapped for the year (left) and total species richness (right, number of all types of organisms including green crabs) captured in traps. A correlation between CAMA CPUE and total abundance existed across sites this year; in general, sites with higher CAMA CPUE had lower abundance of all animals in traps. That is, the more CAMA in an area, the lower the numbers of everything else. No apparent correlation existed in this year's data between CAMA CPUE and species richness.

Figure 6. Community Composition Across Sites in 2025

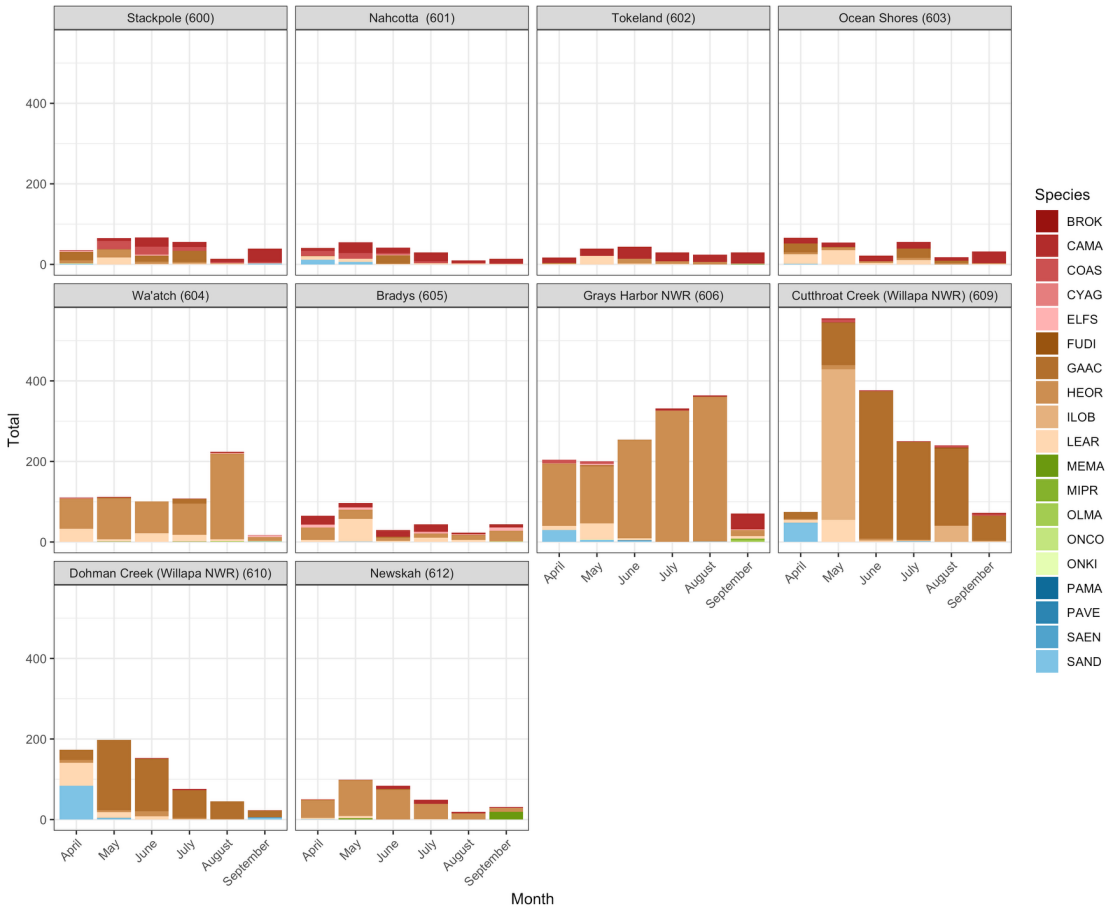

Figure 6 shows community composition by colors and total abundance by the height of each bar by site and month. HEOR was generally the most common species at coastal sites (Wa'atch, Grays Harbor NWR, Newskah), while GAAC dominated at both Willapa NWR sites (Cutthroat Creek, Dohman Creek). Brady's Oyster showed more variability with LEAR and CAMA occasionally dominant. At some sites, seasonal peaks of organismal abundance were clear but the timing of the peak may have been driven by different species. For instance, mid or late season peaks are often the result of a high relative abundance of HEOR (e.g. Grays Harbor NWR), while early season peaks may reflect staghorn sculpin (LEAR, e.g. Brady's Oyster) or Eastern dogwhelk (ILOB, e.g. Cutthroat Creek). CAMA was also an important driver of seasonal abundance at a few sites (e.g. Ocean Shores and Tokeland).

Figure 7. CAMA Size Across the 2025 Season

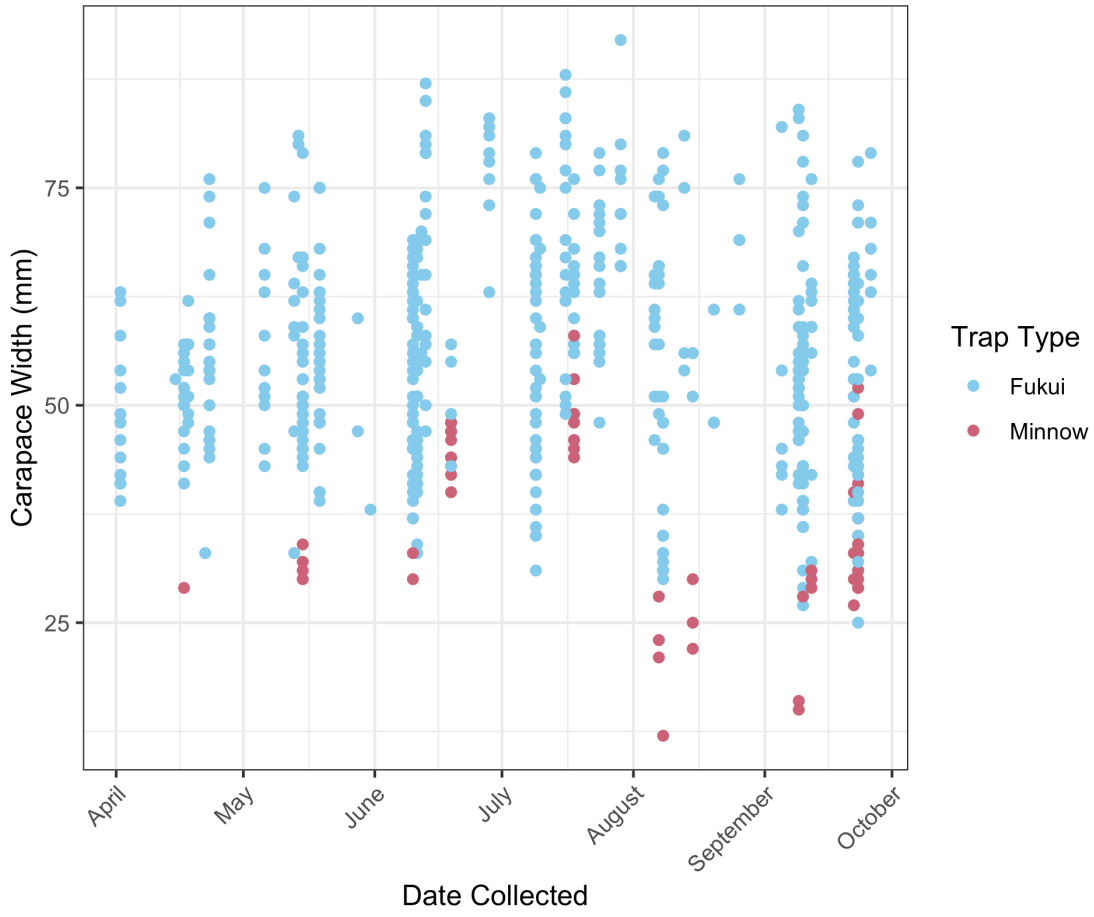

Figure 7 shows CAMA size across the season for all sites, with blue dots representing Fukui trap captures and red dots representing 1" opening minnow trap captures. In this protocol, the minnow trap outperformed Fukui traps in capturing the smallest segment of the population. These observations underscore the importance of using both trap types to fully characterize the size structure of a CAMA population. These observations also emphasize that, on average, the most concentrated arrival of YOY at the network sites was timed in August and September 2025, with a smattering of earlier arriving YOY being captured in late April-early July. This contrasts to 2024 when the early season recruitment was much greater than late season, when YOY were nearly absent. It's also notable that for a second year, in the later months of trapping, the very largest crabs (>70mm) become less numerous in traps relative to the middle-sized CAMA. This pattern may indicate that larger crabs have been "fished out" of the local population through control efforts but might also suggest seasonal migration out of intertidal monitoring areas into deeper water.