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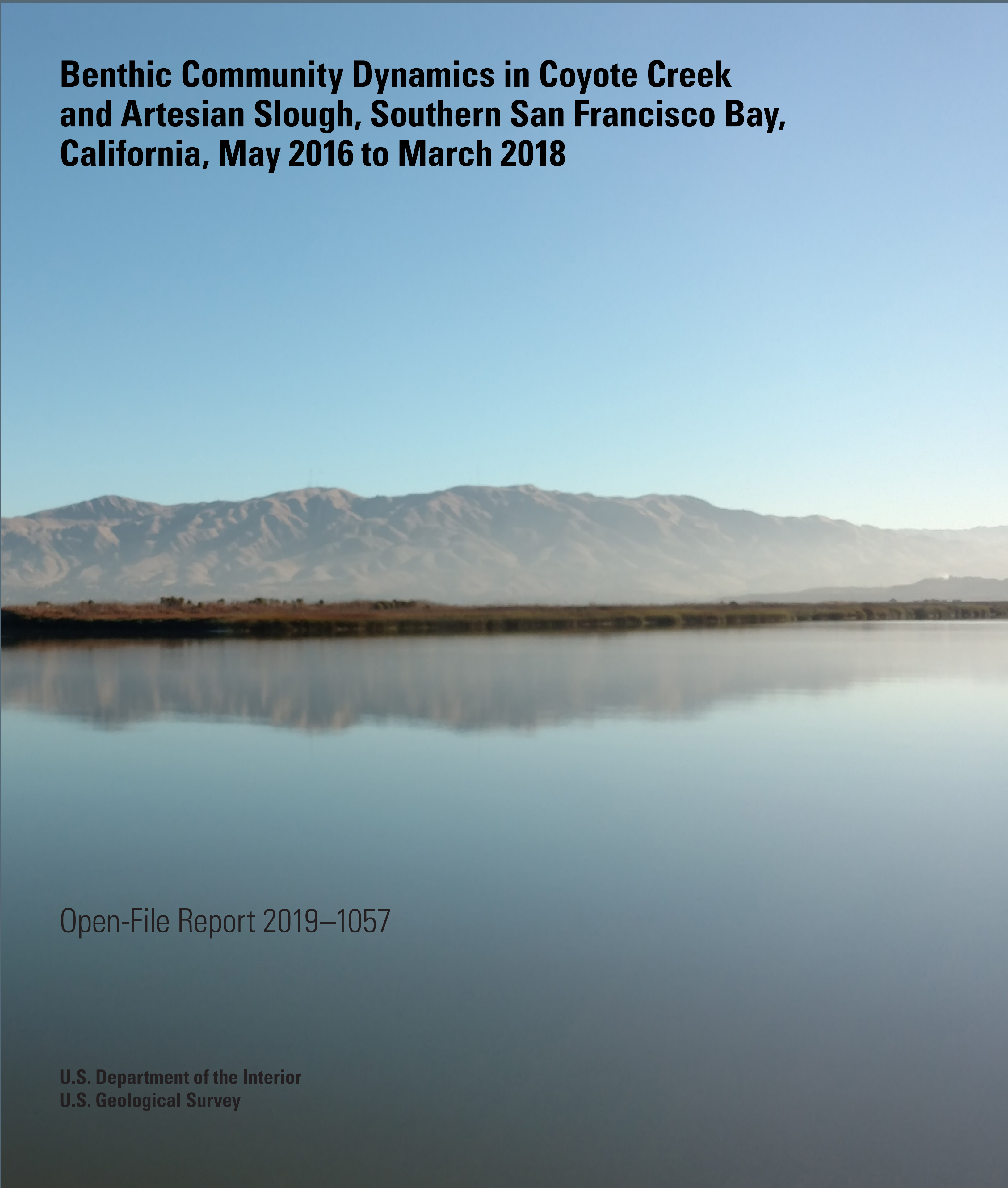

Benthic Community Dynamics in Coyote Creek and Artesian Slough, Southern San Francisco Bay, California, May 2016 to March 2018

Open-File Report 2019–1057

U.S. Department of the Interior
U.S. Geological Survey

Cover. Landscape photograph of Coyote Creek, looking northeast over the southern San Francisco Bay. U.S. Geological Survey photograph by Fancis Parchaso, November 2, 2018.

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Conversion Factors

International System of Units to U.S. customary units

Multiply	By	To obtain
	Length	
millimeter (mm)	0.03937	inch (in.)
meter (m)	3.281	foot (ft)
meter (m)	1.094	yard (yd)
	Area	
square meter (m^2)	0.0002471	acre
square meter (m^2)	10.76	square foot (ft^2)

Supplemental Information

Water year is the 12-month period from October 1 through September 30 and is designated by the calendar year in which it ends.

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Executive Summary

Benthic invertebrate communities are monitored because the composition of those communities can affect and be affected by the water quality of an aquatic system. Benthic communities use and sometimes regulate the cycling of essential elements (for example, carbon). Benthic invertebrate taxa may also indicate acute and chronic stressors in an environment because they accumulate contaminants and can respond (sometimes substantially) to low or high phytoplankton biomass as well as low oxygen conditions. Benthic communities affect water quality by grazing pelagic food resources and increasing the rate of nutrient regeneration through feeding and bioturbating sediments.

The southern San Francisco Bay is a system dependent on phytoplankton as the base to the food web. Despite abundant nutrients, southern San Francisco Bay has had limited phytoplankton production in the last several decades owing to poor light conditions caused by high turbidities, and high grazing losses from the water column by benthic invertebrates and zooplankton. However, the balance of biogeochemical conditions during spring of most years accommodates a short phytoplankton bloom in the southern San Francisco Bay. This balance between available light, nutrients, and grazing has maintained the phytoplankton biomass in the southern San Francisco Bay at low levels relative to other high-nutrient urban estuaries. The role of benthic invertebrates during episodic spring events, as well as in other seasons, remains of great interest to water-quality and biological resource managers.

Our primary objective in this study is to quantify current (2016–18) benthic-community structure and function in the southern San Francisco Bay, and to compare those communities to the communities in the neighboring sloughs. The study area is inclusive of the area south of the Dumbarton Bridge including Coyote Creek and Artesian Slough.

The following results are highlighted in this report:

- Benthic communities of Coyote Creek and Artesian Slough were dominated by different species but similar functional groups from May 2016 to March 2018.

- Total number of individuals and the total number of species in this study are positively correlated. Deviations from this relation are usually related to an extreme increase or decrease in the number of individuals of a particular species.

- Species abundance at stations within the sloughs was higher than the abundance at stations within the southern San Francisco Bay or Coyote Creek. However, grand abundance—the sum of all taxa at all stations—was higher at all stations in 2016 compared to 2017 and 2018. Annelids were prominent across all stations, whereas bivalves were prominent in southern San Francisco Bay and Coyote Creek, and amphipods were prevalent in the sloughs.

- Bivalves were not the most numerically abundant taxon at stations in Coyote Creek but still represented a sizeable proportion of the total abundance during 2016 sampling and decreased during 2017 and 2018. The lack of grazing pressure caused by observed decreases in these taxa starting in 2017 may have allowed the sloughs to become larger sources of phytoplankton in spring. *Potamocorbula amurensis* (Schrenck 1861) and *Gemma gemma* (Totten 1834), the most commonly occurring bivalves observed in this study, are shallow-burrowing bivalves and hence are easy prey for bottom-feeding predators. The quantitative importance of such predator-prey relationships on phytoplankton dynamics warrants further investigation. There were also more amphipods in the sloughs from May 2016 to May 2017; this group is another potential contributor to the benthic-pelagic biomass balance as they also consume phytoplankton in suspension and serve as prey for small fish.

Introduction

Benthic communities are monitored because the individuals are indicators of the water quality of a system, and because they use and sometimes control available element resources such as carbon. Benthic communities are also a good indicator of acutely and chronically stressful environments because they are stationary, may accumulate contaminants, and respond—sometimes markedly—to low or high phytoplankton biomass as well as low oxygen conditions (Cloern, 2001; Richman and Lovvorn, 2004; Thompson and others, 2008).

Benthic communities can affect water quality by grazing pelagic food resources and increasing the rate of nutrient regeneration through feeding and bioturbating the sediment (Caffrey, 1995; Thompson and others, 2008). Southern San Francisco Bay is a system dependent on phytoplankton as the base to the food web (Jassby and others, 1993). Despite abundant nutrients, southern San Francisco Bay has had limited phytoplankton production in the last several decades owing to poor light conditions and high losses from grazing. Thus, the system has rarely experienced anoxia that is usually associated with high nutrient systems (Cloern, 2001). Our conceptual model for phytoplankton growth in southern San Francisco Bay includes a delicate balance between light availability, grazing losses (primarily in the shallow water), and physical mixing of the water column (Lucas and others, 2009). During spring of most years, the balance of biogeochemical conditions accommodates a short phytoplankton bloom in southern San Francisco Bay. This balance has maintained phytoplankton biomass in southern San Francisco Bay at low levels relative to other high-nutrient urban estuaries (Cloern, 2001).

The autumn/winter reduction in filter-feeding bivalves in the shallow water is one of the primary triggers that allows a spring phytoplankton bloom to develop in the southern San Francisco Bay (Cloern and others, 2007). During autumn, predation by migratory and resident birds (Thompson and others, 2008), fish, and invertebrates (Cloern and others, 2007) greatly diminishes the shallow water bivalve communities in both San Pablo Bay and southern San Francisco Bay (fig. 1) (Poulton and others, 2002, 2004; Richman and Lovvorn, 2004). The elimination of bivalve grazing in the shallow water allows the phytoplankton to grow if light and water-column residence time are not limiting (Thompson and others, 2008). Bivalves in the shallow water are thus essentially an annual species with larvae settling each spring followed by rapid growth, which allows them to become a controlling factor on phytoplankton biomass by late spring and summer.

Changes in the benthic community structure are common. Benthic species distributions are dependent on the physical habitat (substrate and depth), physiological limits (such as, salinity; Lee and others, 2003), and predators (Cloern and others, 2007). Therefore, seasonal and interannual differences in freshwater flow result in both seasonal and episodic changes in species abundance and community composition. Episodic events such as wastewater treatment plant malfunctions are likely to have short-term effects, whereas other events such as the introduction of non-native species can have lasting effects on the benthic community (Nichols and Thompson, 1985a, 1985b). Contaminants can also restrict the success of some species (Hornberger and others, 2000). Therefore, when a benthic community that was dominated by filter feeders changes to one dominated by surface deposit feeders, many factors could be responsible for such a change.

The Sacramento River is the largest river and watershed system in California, and drains the slopes from parts of the Coast Range, Mount Shasta, the Cascade, and the Sierra Nevada Ranges. San Francisco Bay receives nearly all of its freshwater from the Sacramento watershed, and the amount of freshwater flowing through the mouth of the Sacramento River can impact salinity throughout the San Francisco Bay (Kimmerer, 2002). The Sarcramento watershed has experienced below normal rainfall and dry conditions with sporadic wet years for the past decade. However, heavy rainfall in water year 2017 (October 2016 to September 2017) ended a five-year drought and set the record for California's wettest year since 1983 (California Department of Water Resources, 2017). A large influx of freshwater from heavy, persistent rains can have similar impacts on the benthic community as a potential wastewater treatment plant malfunction, but on a potentially much larger and farther-reaching scale. The severity and duration of a potential change in the benthic community as a result of this increase in freshwater is still unknown, yet it is unlikely for such a drastic change in salinity as this to go unnoticed. The role of benthic invertebrates during episodic spring events, as well as in other seasons, remains of great interest to water-quality and biological resource managers.

Nichols and Thompson (1985a) described a 10-year dataset for an intertidal location in the southern San Francisco Bay and summarized the state of our knowledge on the bay benthos in 1985 (Nichols and Thompson, 1985b). In both papers, the authors acknowledged the high percentage of non-indigenous species in the benthic community and how the traits of those species might determine community structure and persistence. The 15 most common species in the 10-year study were non-indigenous. Nichols and Thompson also stressed the importance of understanding the role of physical and possibly chemical disturbance in maintaining populations of these opportunistic species (1985a), and the importance of seasonal weather and hydrologic extremes in controlling the seasonal patterns of growth, reproduction, and mortality of individual species (1985b).

Despite the variability that they observed in time and space, the authors concluded that benthic communities sampled "during the past three decades in San Francisco Bay provide no evidence that the qualitative distribution of benthic macroinvertebrate species in the bay had(s) changed perceptibly" (Nichols and Thompson, 1985b, p. 134). Lee and others (2003) analyzed more recent benthic community data from four monitoring programs (two in the southern San Francisco Bay) and concluded that the introduction of *Potamocorbula amurensis* (Schrenck 1861) (Carlton and others, 1990) had rapidly changed the benthic community structure from the period of the Nichols and Thompson studies and that their conclusion needed to be revisited. After its introduction, *P. amurensis* changed the composition of the benthic community in the northern bay (Nichols and others, 1990) and reduced the biomass of phytoplankton (Alpine and Cloern, 1992) and zooplankton (Kimmerer and others, 1994). It is not apparent that the introduction of *Potamocorbula* resulted in large benthic community changes in the southern San Francisco Bay because data are sparse before 1988, but it is possible that the benthic community today in South Bay is a result of competition with and facilitation from *P. amurensis*.

The result of reduced grazing pressure on the phytoplankton has contributed to an upward trend and development of autumnal increases of phytoplankton biomass; however, that these trends occur in conjunction with changes in turbidity is also of great importance to phytoplankton biomass, and its effects cannot be overlooked (Cloern and others, 2007). As shown by this example, trends in phytoplankton biomass are not solely linked to grazing, and understanding the ecological dynamics of the southern San Francisco Bay is not always straightforward. This is a cautionary story, as it is important that we not misinterpret changes in phytoplankton standing stock to be solely due to changing water-quality conditions when there may be equally, if not more impactful biotic changes.

Predation on benthic bivalves is important, but other benthic invertebrates are also a substantial prey resource for many fish species and are considered a component of essential fish habitat (The Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. 1801–1891(d)). Our conceptual model for maintaining appropriate benthic prey for fish and bird species is based on understanding what prey characteristics and habitat are important for the predator. The effect of species swaps within benthic communities as previously noted (Nichols and Thompson, 1985a and 1985b) may be very important to predators. For example, a surface-dwelling bivalve like *P. amurensis* has a soft shell, is highly caloric, is easy to capture, and has been shown to be valuable prey in San Francisco Bay (Richman and Lovvorn, 2004). A deep-burrowing tube-dwelling worm such as *Sabaco elongatus* (Verill 1873), which is common in the southern San Francisco Bay (Lee and others, 2003), is unlikely to be fed upon by either fish or birds. Two prominent amphipod species, *Monocorophium acherusicum* (Costa 1853) and *Americorophium spinicorne* (Stimpson 1857), are relatively mobile and spend time burrowed into the benthos; *M. acherusicum* lives in silky tubes and leaves to forage and mate, whereas *A. spinicorne* burrows into soft sediment to forage and avoid predators (Bousfield and Hoover, 1997). Like the annelid *S. elongatus*, these amphipods make it challenging for predators to consume them. For this reason, analysis of the benthic community needs to include abundance and functional ecology (feeding mode, habitat, motility, and structures such as tubes and shells, which may impede predation) of each species.

Our primary objective is to quantify the current (2016–18) community structure and function in the benthic community in the sloughs connected to southern San Francisco Bay and to compare those communities to the benthic community in the southern San Francisco Bay. The study area (fig. 1) is inclusive of the area south of the Dumbarton Bridge, including Coyote Creek and Artesian Slough. To fully understand how the benthic community changes seasonally, benthic community data are needed from shallow sloughs and deeper channels, because bivalves in the channel are the source of recruits (animals less than or equal to [≤] 2.5 millimeters [mm] in length) following the autumn predation on the bivalves.

Methods

Eight stations were sampled in southern San Francisco Bay, Coyote Creek and Artesian Slough (fig. 1). Samples were collected from May 2016 to March 2018. Each station was sampled at least once every season (total of 13 times) from May 2016 to March 2018.

Samples were provided to the U.S. Geological Survey (USGS) by the San José-Santa Clara Regional Wastewater Facility staff. Samples were collected with a 0.05-square meter (m^2) weighted Van Veen grab that was hand deployed in all but the deep-water stations. Samples were sieved through a 0.5-mm screen, preserved in 10-percent buffered formalin, and transferred to 70-percent ethyl alcohol with rose bengal dye. Samples were sorted, and well-known species were enumerated at the USGS Benthic Laboratory in Menlo Park. A quality-assurance procedure was used whereby samples were double sorted/identified depending on the difficulty and the number of organisms in the sample. All species were identified and enumerated to the lowest taxon possible.

Results

Community Composition

Species were classified into one of six taxa for further anaylses: annelida, amphipoda, bivalvia, cumacea, isopoda, and ostracoda. Bivalves, annelids, and amphipods represented a substantial portion of the community composition and are subsequently the focus of this report. Cumaceans, isopods, and ostracods remained negligible throughout most of the sampling period.

Bivalves in the southern San Francisco Bay and adjacent sloughs are filter feeders or deposit feeders with one species capable of feeding both ways (Poulton and others, 2004; Jones and others, 2009). Many bivalves are broadcast spawners with external fertilization except for *Gemma gemma* (Totten 1834), which broods its young. Except for small surface-dwelling species (*G. gemma,* approximately 5 mm in length, and juvenile *P. amurensis*), bivalves are usually stationary once they settle and are thus easily captured by predators. This combined with their high caloric value distinguishes bivalves as important prey for demersal fish and birds (Richman and Lovvorn, 2004). The large size of bivalves relative to the rest of the benthic community means they consume a substantial amount of the available carbon in the water column and in the sediment surface. Their large size also allows them to “wait out” periods of unfavorable water quality and low food availability and respond very quickly once conditions change. Therefore, they are formidable competitors with pelagic filter feeders such as zooplankton, which must reproduce and grow populations in response to increased food availability.

Annelids present throughout the southern San Francisco Bay and adjacent sloughs are suspension and deposit feeders that feed on phytoplankton and detritus in the water column and on the sediment surface. The most abundant species of annelids in this study were opportunistic tube-dwellers or burrowers with a wide range of temperature and salinity tolerances, a characteristic of estuarine species. Annelids were often present in high abundance across all stations and were temporally and spatially the most abundant taxa on average. As a result, annelids represent important prey sources for benthic predators, including shorebirds and fish. The annelid species commonly occurring in southern San Francisco Bay and Coyote Creek preferred more marine environments whereas the annelid species occurring in Alviso and Artesian Sloughs were more comfortable in brackish or fresh waters.

The most common amphipods are tube-dwelling filter feeders. They are oviparous/viviparous (brood their young) and release their young as juveniles. Because most amphipods with these traits can swim, rapidly leave an area when challenged, and rapidly invade an area to reestablish their tubes and burrows; they are considered opportunistic species despite producing a relatively low number of juveniles. They feed on pelagic food sources (phytoplankton is common) and sediment surface detritus and bacteria. Amphipods occur in high numbers of individuals at some locations, which results in the consumption of a noticeable amount of the pelagic food. In most cases, however, they still have an order of magnitude (or less) effect on the phytoplankton biomass relative to the bivalves (Jones and others, 2009). Amphipods are common prey for fish and birds, mainly shore birds and ducks (Stenzel and others, 1976; Feyrer and others, 2003). Pelagic and demersal fish feed on amphipods as some species vacate their tubes at night and actively swim, making them available to pelagic feeders.

Temporal Trends in Community Composition

Here we refer to taxa as dominant when their abundance represents more than 50 percent of the total abundance at a given station and month, and taxa are considered prominent when their abundance represents between 10 and 50 percent of the total abundance at a given station and month. At station SB03 in the southern San Francisco Bay, all taxa experienced an abundance increase during the summer months (fig. 2, table 1). Bivalve abundance was relatively low throughout sampling, with abundance never surpassing 200 individuals per 0.05 m^2 (individuals/0.05 m^2); they were most abundant during summer to autumn 2016 and summer 2017 before decreasing because of fluctuations in *G. gemma* and *P. amurensis*. Annelids were the most abundant taxon during every month of sampling except November 2016, when bivalves increased slightly above the annelids by 50 individuals/0.05 m^2. Though consistently dominant, annelid abundance peaked during summer and winter because of increases in the abundance of *Streblospio benedicti* Webster 1879. Amphipods exhibited relatively low abundance throughout sampling, but experienced small peaks during summer 2016 and summer to autumn 2017 related to changes in *M. acherusicum* abundance.

Bivalves and annelids made up much of the abundance in Alviso Slough at station Alviso, whereas amphipods, isopods, cumaceans, and ostracods accounted for less than 25 percent of total abundance (fig. 3, table 2). At the beginning of sampling in May 2016, bivalves were the most abundant taxa. Bivalves peaked May and September of 2016 at about 1,000 and 850 individuals/0.05 m^2, respectively, then sharply decreased in November 2016 and never recovered above 150 individuals/0.05 m^2. Following a loss of *G. gemma* in November 2016, bivalve abundance decreased, and annelids became the most abundant taxa from November 2016 until March 2018 when sampling concluded. Annelid abundance fluctuated slightly between about 100 and 150 individuals per 0.05 m^2 from May 2016 to November 2016 before decreasing until the following summer. From July 2017 to March 2018, annelid abundance remained around 150 individuals per 0.05 m^2 with a decrease in September to 16 and a spike in November to as much as 250 individuals/0.05 m^2. These fluctuations resulted from abundance changes of *S. benedicti* and Oligochaetes. Amphipods started out as the second most abundant taxa in May 2016 at about 290 individuals/0.05 m^2, then decreased to 9 individuals/0.05 m^2 in July 2016 and never reached more than 30 individuals/0.05 m^2 from July 2016 to March 2018. This 2016 reduction was due to decreases in *Ampelisca abdita* Mills 1964, *Grandidierella japonica* Stephensen 1938, and *M. acherusicum*.

Annelids, amphipods and bivalves all peaked during fall 2016 and then substantially decreased in March 2017 at station Mud in Coyote Creek (fig. 4, table 3). Annelids and bivalves greatly recovered in June 2017, but amphipod abundance remained low. Annelids somewhat followed bivalve abundance patterns until bivalves decreased in August 2017 and failed to recover. The changes in total annelid abundance marked the changes in abundance of *S. benedicti* and Oligochaete species, while bivalve seasonal fluctuations consisted of changes in *P. amurensis* abundance, and to a lesser extent to *G. gemma* abundance changes. Amphipods and bivalves had opposing abundance levels throughout the sampling period; when one was high the other tended to be low. Bivalves were more abundant than amphipods during spring and summer of 2016, until amphipod abundance increased above bivalves during autumn 2016 and winter 2017. This seasonal pattern continued into 2018. The peaks in amphipods abundance were both linked to changes in *Grandidierella*. However, the autumn 2016 peak also corresponded with changes in *M. acherusicum* and the winter 2018 peak was also linked to changes in *Sinocorophium alienense* (Chapman 1988).

All taxa peaked in May 2017 and decreased in July 2016 and July 2017 in Coyote Creek at station SB04 (fig. 5, table 4).

Bivalves maintained a low abundance throughout sampling, except in August 2016, which had about 370 individuals/0.05 m^2. Annelid abundance peaked in summer/autumn 2016 and summer/winter 2017 and had little similarity to amphipod abundance. The summer 2016 and winter 2017 annelid peaks coincided with amphipod decreases in abundance, whereas the fall 2016 and summer 2017 annelid peaks coincided with amphipod peaks in abundance. Most annelid fluctuations were related to changes in *S. benedicti* and Oligochaete abundance; however, *Boccardiella ligerica* (Ferronnière 1898) abundance also influenced the spring 2017 abundance peak. Amphipods had substantial peaks (greater than [>] 1,550 individuals/0.05 m^2) and decreases (3–240 individuals/0.05 m^2) in abundance during 2016. In spring 2017, amphipods were not as abundant as 2016, and decreased for the rest of the year. In March 2018 there was small increase in amphipod abundance. Overall, amphipods peaked during spring and autumn of 2016 and spring of 2017 and 2018. *A. spinicorne* was the main contributor to the spring 2016 and 2017 abundance peaks, whereas *Si. alienense* was the largest contributor to the relatively high abundance from autumn 2016 to winter 2017.

Total abundance changed substantially (plus or minus [±] 1,000 individuals/0.05 m^2) in almost every month until September 2017 at station SB13 in Artesian Slough (fig. 6, table 5). Station SB13 was highly abundant compared to the other stations, with a maximum total abundance (about 8,500 individuals/0.05 m^2 in January 2017) quadruple that of the maxima of most other stations. The exception to this was the ostracod boom in December 2017 at station SB15. Despite this high abundance, cumaceans, isopods, ostracods, and bivalves were negligible contributors to the total abundance at station SB13. Bivalves reached their highest abundance in September 2016 (89 individuals/0.05 m^2) because of *P. amurensis,* before decreasing to abundances less than 30 individuals/0.05 m^2 starting in November 2016. Annelids were the second most abundant taxon at station SB13, and three of their four peaks opposed amphipod abundance. Annelids peaked during summer and autumn 2016, as well as spring and summer 2017. Overall, abundance gradually decreased from its maximum abundance in autumn 2016. The autumn 2016 peak and gradual decrease of annelids was due to a surge and then decrease in *S. benedicti* and Oligochaetes, and *B. ligerica*. The highest peak in amphipod abundance was January 2017 (more than 8,000 individuals/0.05 m^2), with July 2016 (about 4,900 individuals/0.05 m^2) and May 2017 (about 3,400 individuals/0.05 m^2) representing the previously mentioned summer and spring peaks. During their peaks, amphipods were also the most abundant taxon at SB13. Fluctuations in amphipod abundance were due to changes in *A. spinicorne*, and to a lesser extent, *G. japonica*.

All taxa decreased in abundance at station Upcoy in Artesian Slough between November 2016 and March 2017, when total abundance decreased from almost 1,400 to 90 individuals/0.05 m^2 (fig. 7, table 6). Bivalves maintained low abundance for most of the study but peaked at about 300 individuals/0.05 m^2 in November 2016 related to an increase in *P. amurensis*. Annelids were the dominant taxon at station Upcoy for all months sampled, except May 2016, January 2017, and January 2018. *S. benedicti* and Oligochaetes were the largest contributors to these patterns. Amphipods peaked during winter and late summer throughout the sampling period. These peaks were related to separate species. In summer 2016, *A. spinicorne* was the dominant amphipod species, whereas in winter 2017 and 2018, *G. japonica* was the dominant amphipod. Cumaceans remained at a low abundance until after the March 2017 decrease, when they slowly began to increase in abundance. A slight peak in summer 2017 was followed by a larger peak in January 2018 of about 620 individuals/0.05 m^2.

Spatial Trends in Community Composition

Total abundance across all stations was highest from May 2016 to March 2017, with taxa across stations experiencing larger peaks in abundance than observed following March 2017 (figs. 8–14, at back of report). Annelids, amphipods, and bivalves were the dominant taxonomic groups throughout the study and were responsible for most changes in total abundance observed at the different stations. Annelids peaked during summer and autumn but were in relatively high abundance throughout sampling. Amphipods exhibited high variability across stations through time, with abundance peaking during spring and winter. In contrast, bivalves peaked in abundance during summer and autumn, and maintained relatively low abundance across all stations.

Annelids were dominant in Artesian Slough and prominent in Coyote Creek and Alviso Slough during 2016 and became the most dominant taxon starting January 2017 when *S. benedicti* became highly abundant in southern San Francisco Bay as well as in the sloughs (figs. 8–13). *S. benedicti*, along with *Heteromastus filiformis* Claparède 1864 in the western stations (SB03, Alviso, and Mud stations) and *B. ligerica* in the eastern stations (SB04, SB13, SB14, SB15 and Upcoy) maintained high abundance from January 2017 until sampling concluded in March 2018. *Streblospio benedicti* is an opportunistic pioneer species that was present in high abundance across all stations because of its ability to tolerate a wide range of temperature, salinity, and disturbance (Lee and others, 2003).

Amphipods were primarily dominant in Coyote Creek and Artesian Slough during May to July 2016 and November 2016 to May 2017 before being surpassed in abundance by annelids in July 2017 (figs. 8–9 and 12–16). Amphipod abundance fluctuated greatly in Artesian Slough, with changes of plus or minus thousands at station SB13 every month sampled. These changes were concurrent with large shifts in *M. acherusicum* in southern San Francisco Bay and Coyote Creek, with *A. spinicorne* in the sloughs, and with abundance changes in *G. japonica* across all stations. These species are all suspension feeders that consume phytoplankton and brood their young; however, *M. acherusicum* prefers a saline environment and cool waters, whereas *A. spinicorne* often occurs in areas of low to moderate salinity. *G. japonica* is prevalent at all stations and tends to fluctuate with *M. acherusicum* and *A. spinicorne* but can tolerate a wider range of temperature and salinity (Bousfield and Hoover, 1997).

Bivalves were dominant in Alviso Slough and Coyote Creek until November 2016 when bivalve abundance began to decrease, and annelid abundance began to increase (figs. 8–12). From January 2017 until sampling concluded in March 2018, bivalves were only the dominant taxa on two occasions: splitting abundance with annelids at station SB03 in May 2017 and at station Alviso in September 2017 (figs. 15 and 17). The increase and decrease of bivalves is attributed to changes in the abundance of *P. amurensis*, a spawning suspension feeder, and *G. gemma*, a brooding suspension/filter feeder.

Artesian Slough Stations SB14 and SB15

Two stations in Artesian Slough, SB14 and SB15, were sampled quarterly. These stations are unique because they represent the only locations sampled where the ostracod, *Cyprideis* sp., accounts for a substantial percentage of total abundance (figs. 17–20). At station SB14, *Cyprideis* sp. peaked in September 2017. Bivalve abundance remained negligible until December 2017 when *P. amurensis* abundance increased. Annelid abundance at station SB14 decreased slightly in autumn 2017 following a loss of *B. ligerica* and *Laonome calida* Capa 2007 before recovering. A sharp increase in *G. japonica* at station SB14 in December 2017 caused amphipod abundance to peak (fig. 21 and table 7, at back of report).

Cyprideis sp. exhibited extremely high abundance at station SB15 and were subsequently heavily dominant, as ostracods were essentially the only taxon present. More than 1,000 ostracods/0.05 m^2 were present each month sampled from June 2017 to March 2018, with an estimate of more than 15,000 individuals/0.05 m^2 observed in December 2017. Annelids were also present with about 1,400 individuals/0.05 m^2 in March 2017 before greatly decreasing. Amphipod and bivalve abundance were negligible throughout sampling at station SB15 (fig. 22, table 8).

Transitions in Benthic Community Function—As Consumers, as Prey, as Geochemical Enhancers

Filter feeders are effective at moving carbon from the water column to the benthos as food and as feces, so their presence can speed up the geochemical processing of organic matter. For the entire sampling period, filter feeders were the dominant feeding type present at the sampling stations. Annelids were highly abundant spatially and temporally, and thus may serve as a food source for predators of the benthos. The main species present throughout the study area were tube-dwellers or burrowers.

Bivalves are an integral part of the phytoplankton growth dynamics. The decreased abundance of bivalves in the spring followed with increasing numbers by summer is a seasonal pattern that is observed in the greater southern San Francisco Bay. The amphipods were present all year but responded quickly to the changes in bivalve presence. The change in amphipod abundance may have been due to relocating or being preyed upon, but they were still the most abundant group in at least one station in the sloughs from September 2016 to May 2017. Changes in prominent species involved species that occupied the same ecological niche, as most of the prominent amphipods were brooders and deposit or suspension feeders. Species composition changed spatially based on salinity, with species preferring saline environments occurring in southern San Francisco Bay and Coyote Creek and species preferring fresher environments occurring in the neighboring sloughs to the east. Despite these relationships, most of the prominent amphipod species present across stations can live in a wide range of salinities.

Conclusions

Throughout sampling, species composition changed spatially in relation to the nearby freshwater inputs. Western stations in southern San Francisco Bay are more saline, whereas the eastern stations in the neighboring sloughs experience freshwater inputs from the wastewater treatment facility. Although all prevalent species occurring at stations throughout the study can survive in relatively wide ranges of salinity when necessary, the most abundant species present indicate this west-east salinity gradient based on the areas they occur; the species present in southern San Francisco Bay prefer more saline conditions over fresher conditions, whereas the opposite is true of species occurring in the nearby sloughs. This underlying salinity gradient coupled with the rapid influx of freshwater associated with the heavy rains in water year 2017 (the 12-month period from October 1, 2016, through September 30, 2017) coincides with drastic changes in the community composition and overall abundance throughout the southern San Francisco Bay and adjacent sloughs; water year is the 12-month period from October 1 through September 30 and is designated by the calendar year in which it ends.

Bivalves declined starting in late 2016, which coincides with the onset of water year 2017. With fewer bivalves in the environment to heavily consume phytoplankton (notably *Potamocorbula amurensis* and *Gemma gemma*), other taxa had room to thrive.

Annelids, ever adaptable and sturdy, became dominant across the sampled areas starting in January 2017 during the heavy rain. Annelid abundance increased above bivalve and amphipod abundance following the influx of freshwater and subsequent changes in salinity throughout the study area. *Streblospio benedicti,* an opportunistic, tube-dwelling pioneer species with a wide salinity tolerance, flourished throughout the southern San Francisco Bay and the neighboring sloughs. Interestingly, another tube-dwelling annelid, *Boccardiella ligerica*, became a prevalent species in the eastern sloughs; but unlike *S. benedicti, B. ligerica* prefers low salinity waters while tolerating brackish conditions.

Amphipod abundance closely followed the salinity gradient, with more saline species observed in the southern San Francisco Bay and fresh or brackish species observed in the eastern sloughs. For example, *Monocorophium acherusicum*, a marine amphipod, occurred most in the southern San Francisco Bay and Coyote Creek stations; in contrast, *Americorophium spinicorne* prefers more fresh water and occurred in higher abundance in the eastern sloughs. All the amphipod species that were prevalent in this study consume phytoplankton, and the increase in amphipod abundance also coincides with an increase in freshwater and a decrease in bivalve abundance.

Although the decline in bivalve abundance was met with an increase in abundance of other taxa, this increase does not necessarily translate into equivalent prey sources for predators. The increase of annelids was related to rising numbers of *S. benedicti* and *B. ligerica,* both of which are tube-dwellers that are hard to access and therefore unlikely to be fed upon by either fish or birds. The increase in amphipods was related to the rising numbers of *M. acherusicum* in southern San Francisco Bay and Coyote Creek and *A. spinicorne* in the neighboring sloughs, both of which also burrow into the benthos out of reach of predators and are mobile enough to escape. The increased abundance of annelids and amphipods to match the decline in bivalves does not correlate to stable, available prey sources for birds and demersal fish.

Freshwater influxes tend to cause short-term changes to benthic community composition. Given the tremendous amount of freshwater deposited into the San Francisco Bay-Sacramento Delta system in water year 2017, the duration and magnitude of such a shift in salinity and potential phytoplankton and food web dynamics is not yet known.

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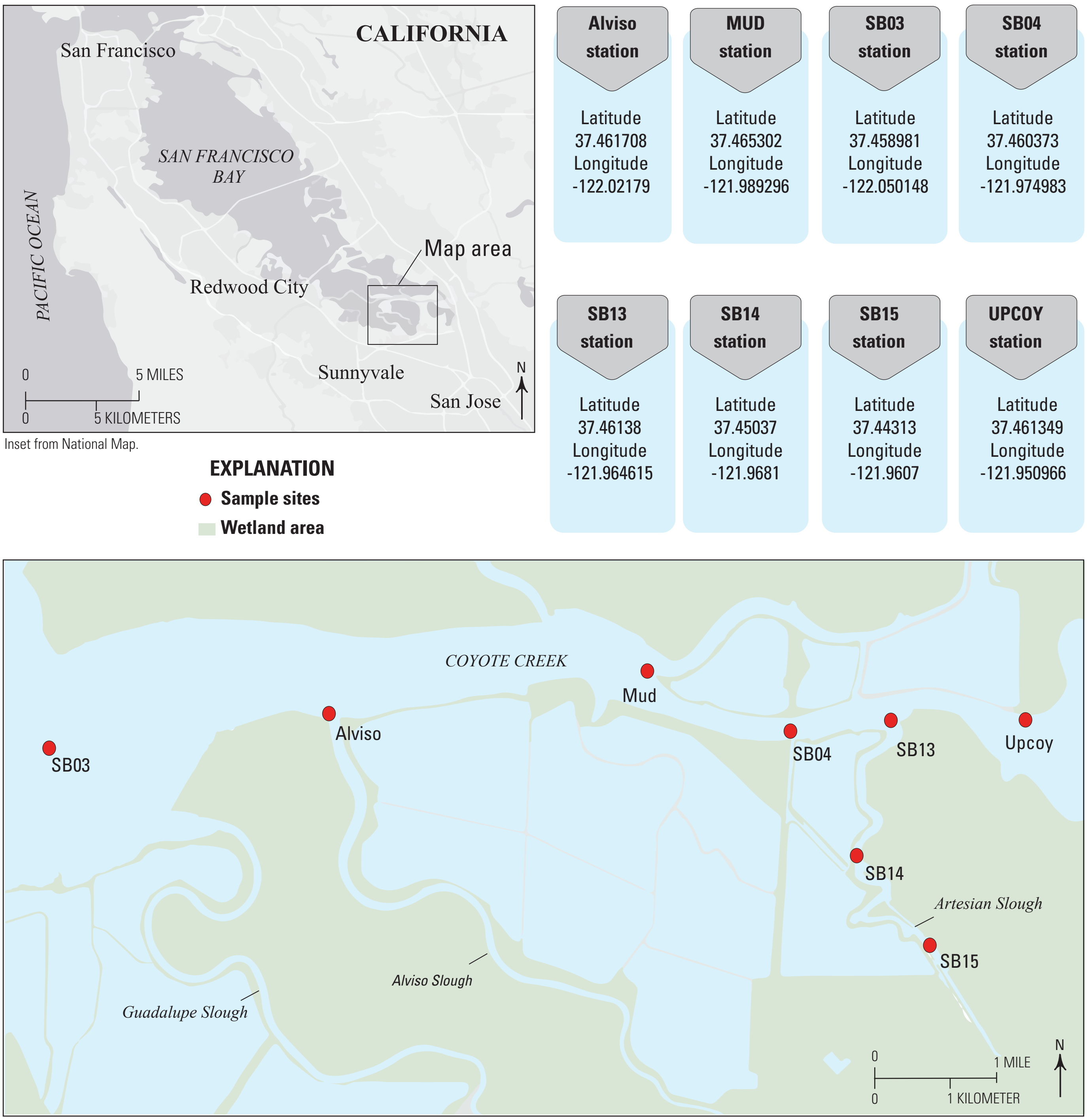
Figures



Base map from Tableau

Figure 1. Benthic sampling station locations in southern San Francisco Bay and sampling area in relation to San Francisco Bay proper.

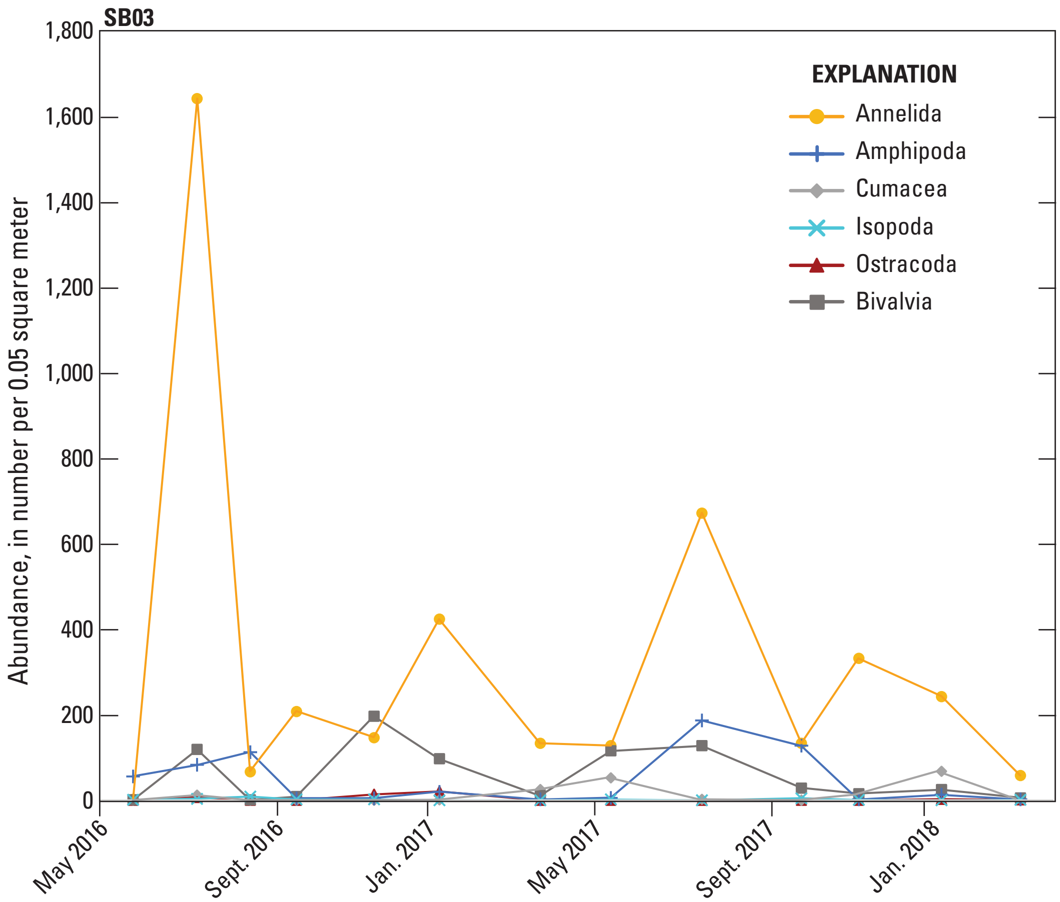


Figure 2. Time series graph showing abundance of major taxa at station SB03 in southern San Francisco Bay, May 2016–March 2018.

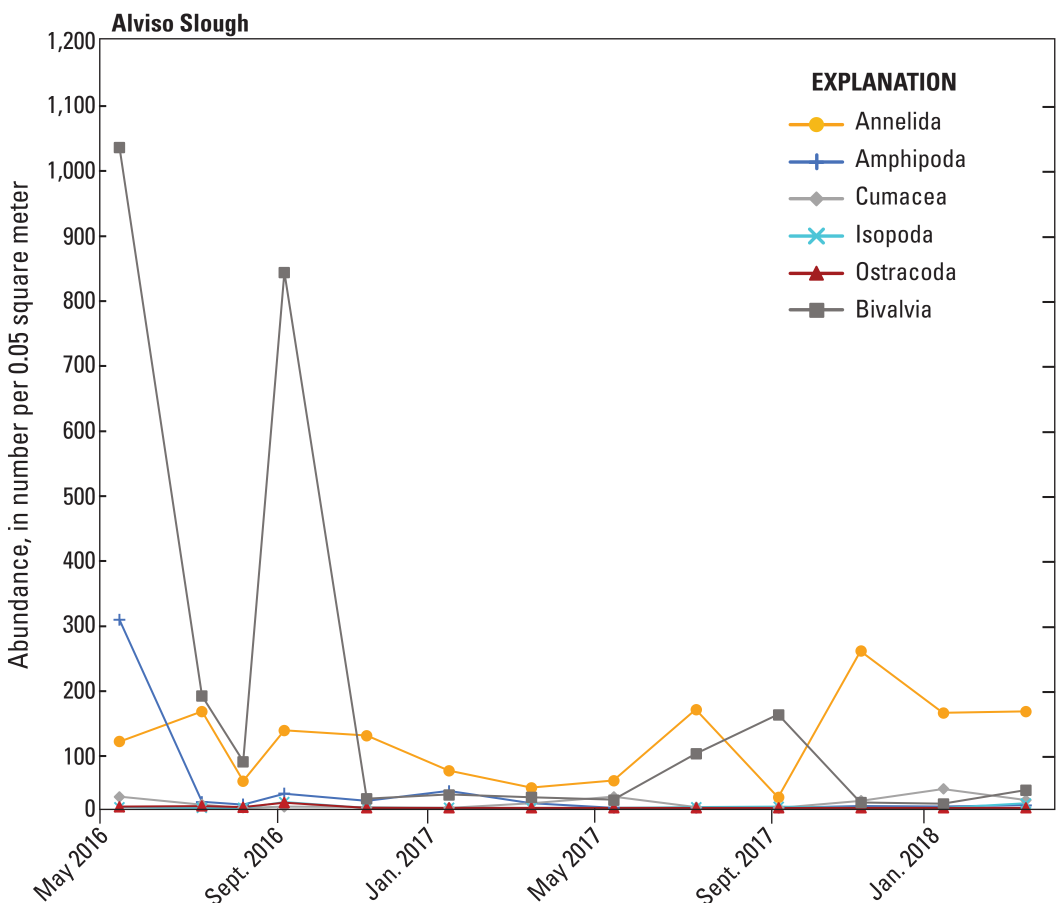


Figure 3. Time series graph showing abundance of major taxa at station Alviso in Alviso Slough, May 2016–March 2018.

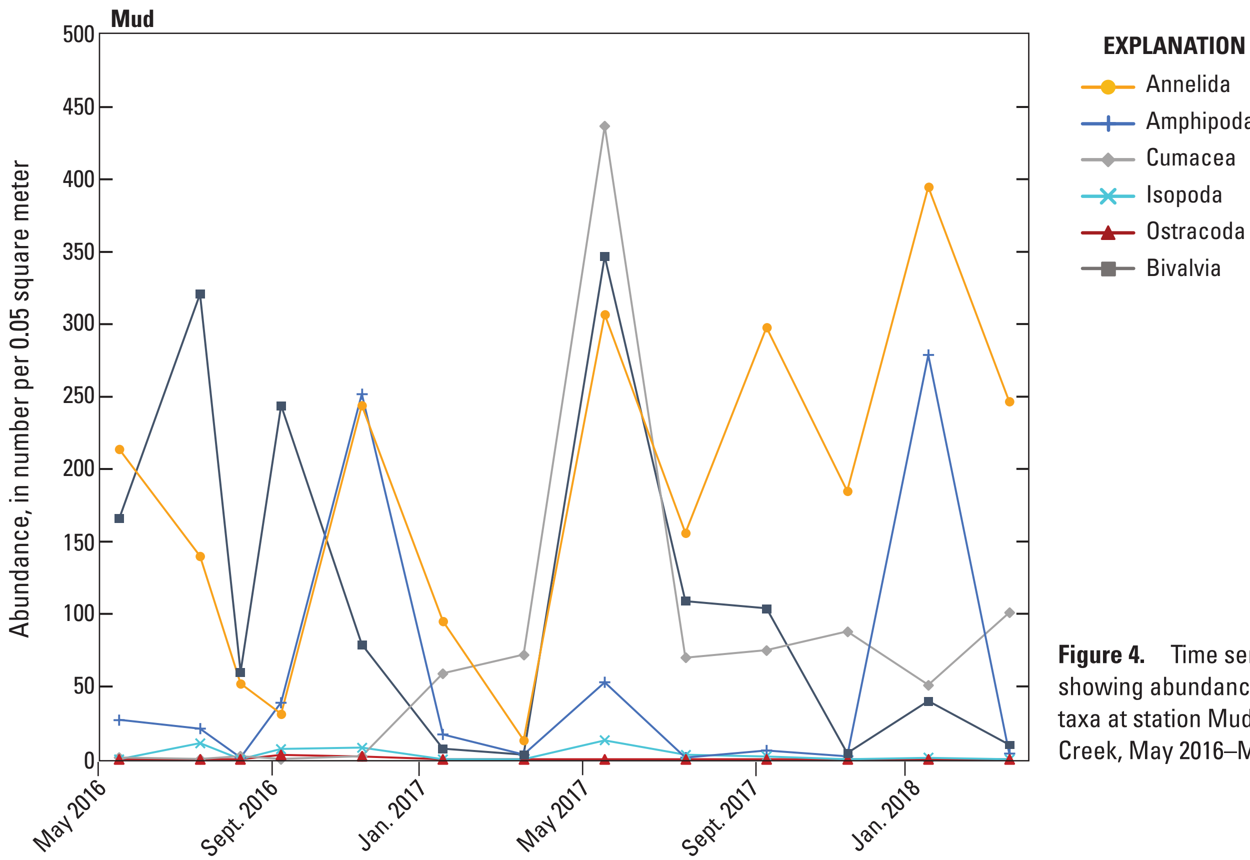


Figure 4. Time series graph showing abundance of major taxa at station Mud in Coyote Creek, May 2016–March 2018.

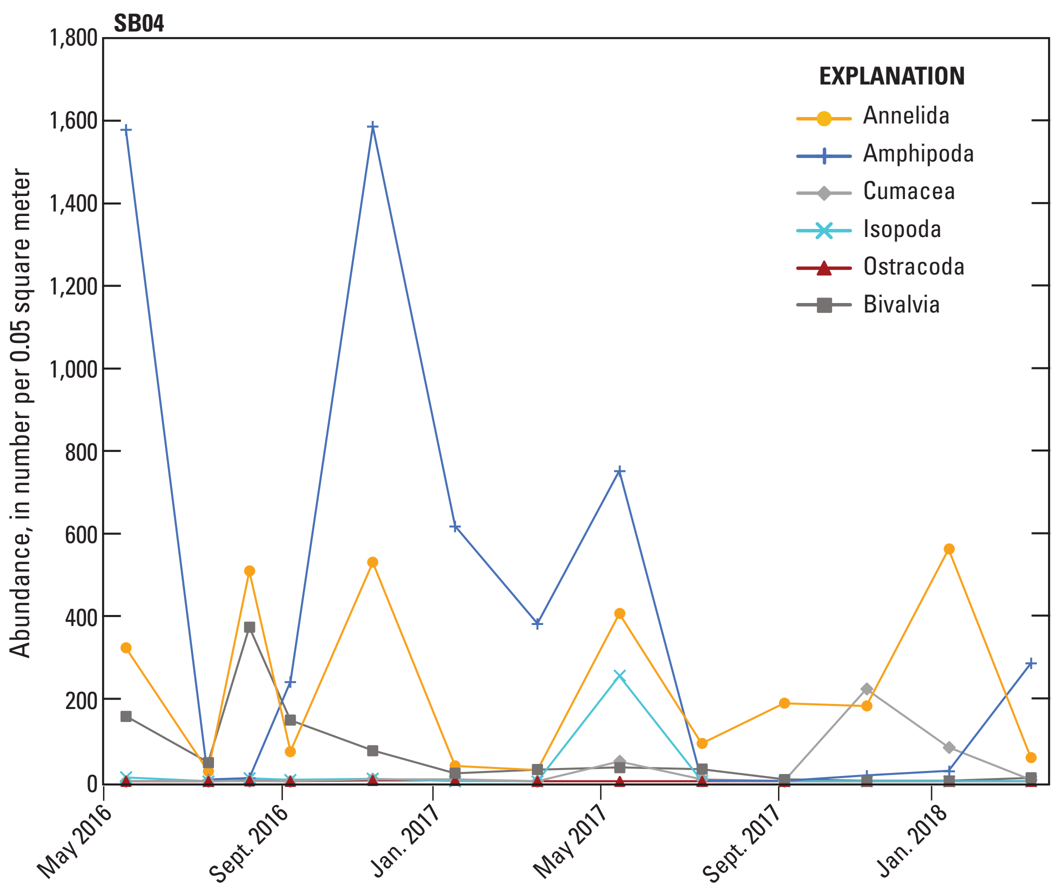


Figure 5. Time series graph showing abundance of major taxa at station SB04 in Coyote Creek, May 2016–March 2018.

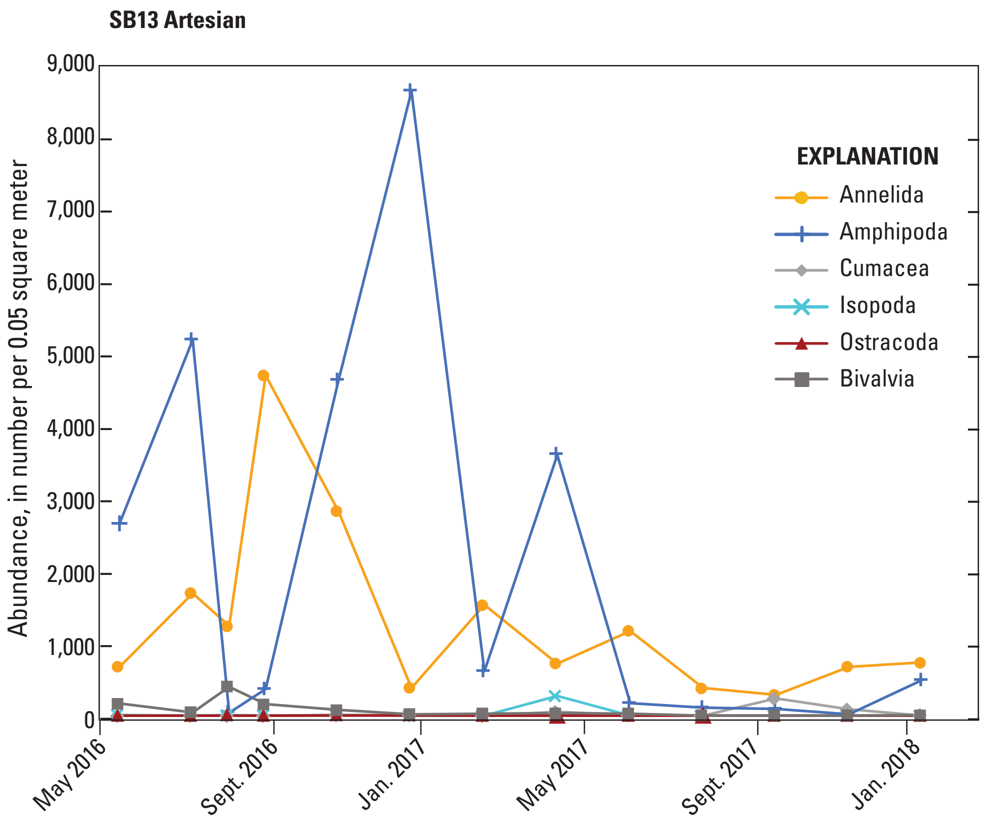


Figure 6. Time series graph showing abundance of major taxa at station SB13 in Artesian Slough, May 2016–March 2018.

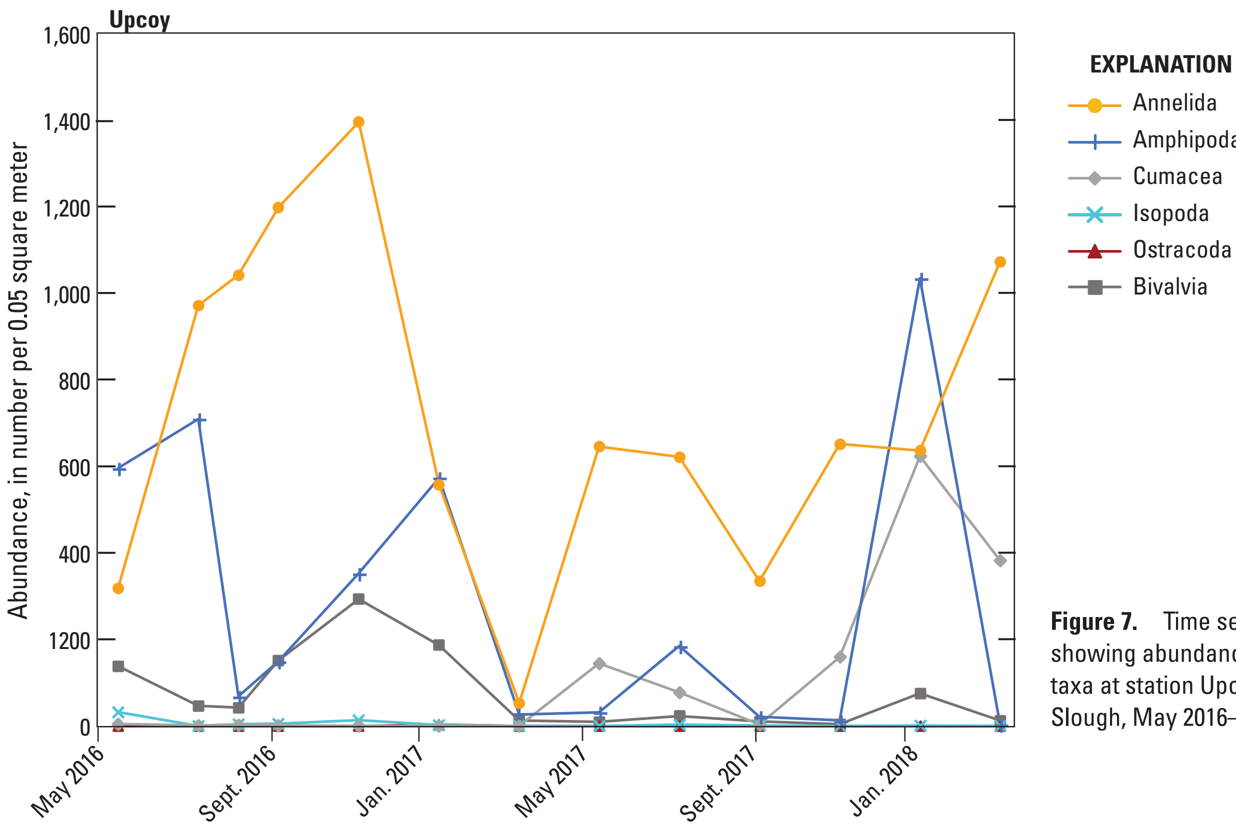


Figure 7. Time series graph showing abundance of major taxa at station Upcoy in Artesian Slough, May 2016—March 2018.

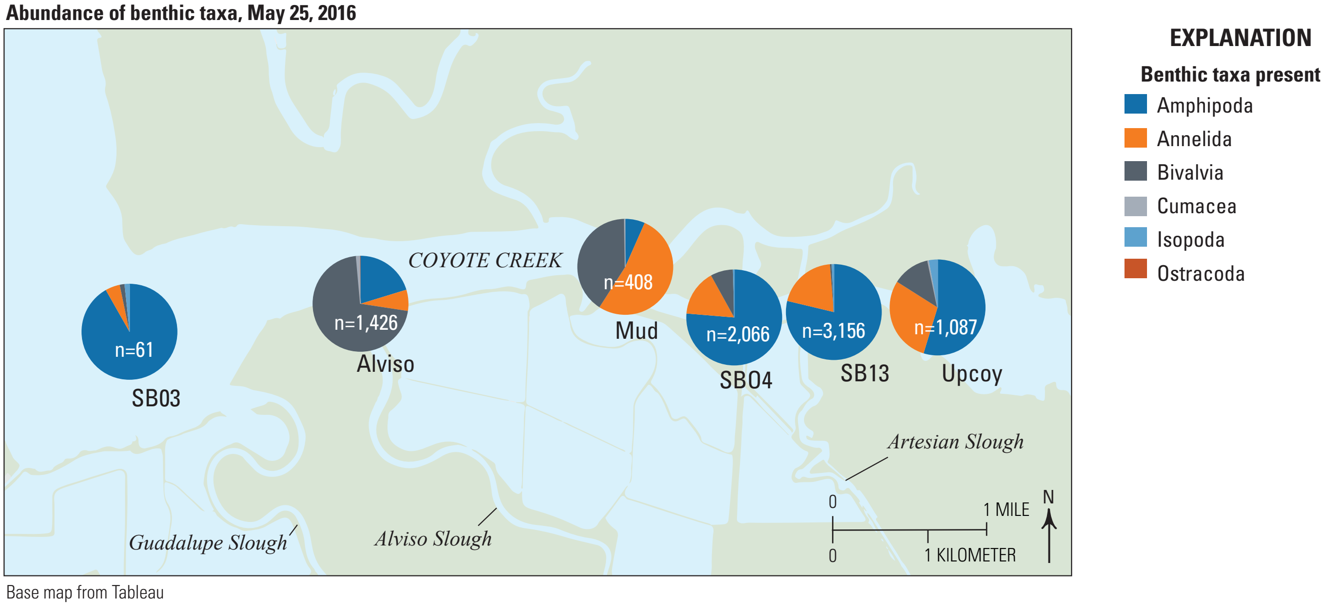


Figure 8. Abundance of major taxa at six benthic sampling stations, measured in May of 2016. Total fauna abundance (n=) is represented in total number of specimen recovered per 0.05 square meter. The proportional representation of taxa at each station is shown on the pie charts with taxa represented by different colors.

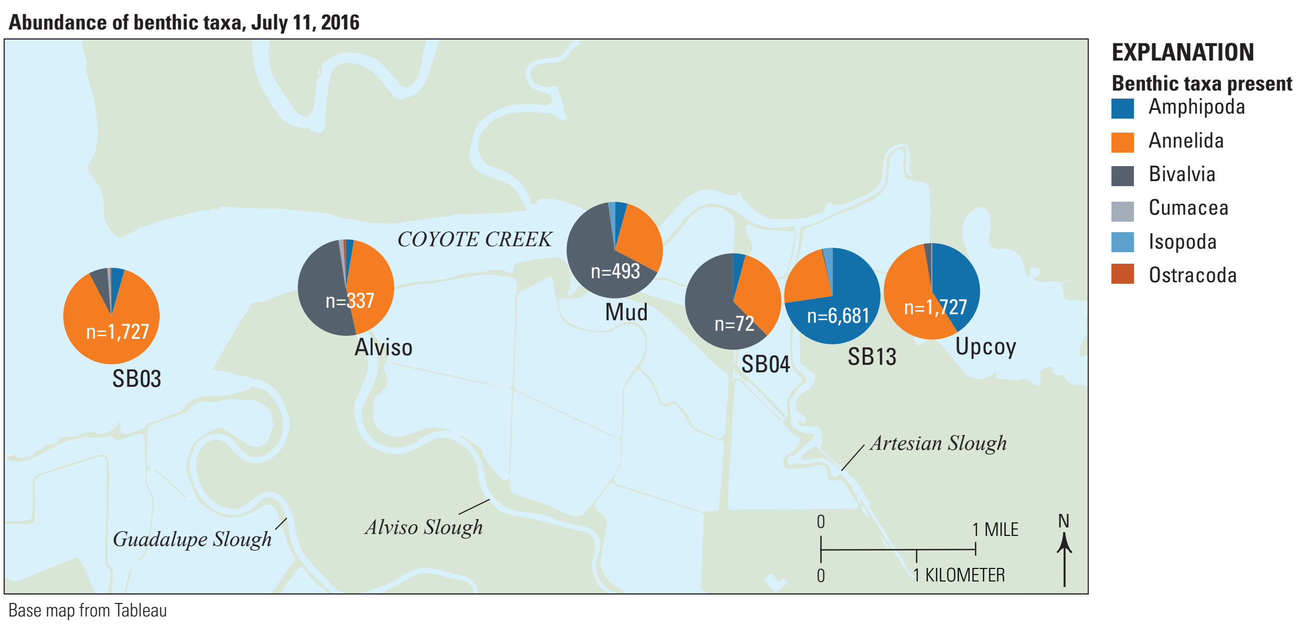
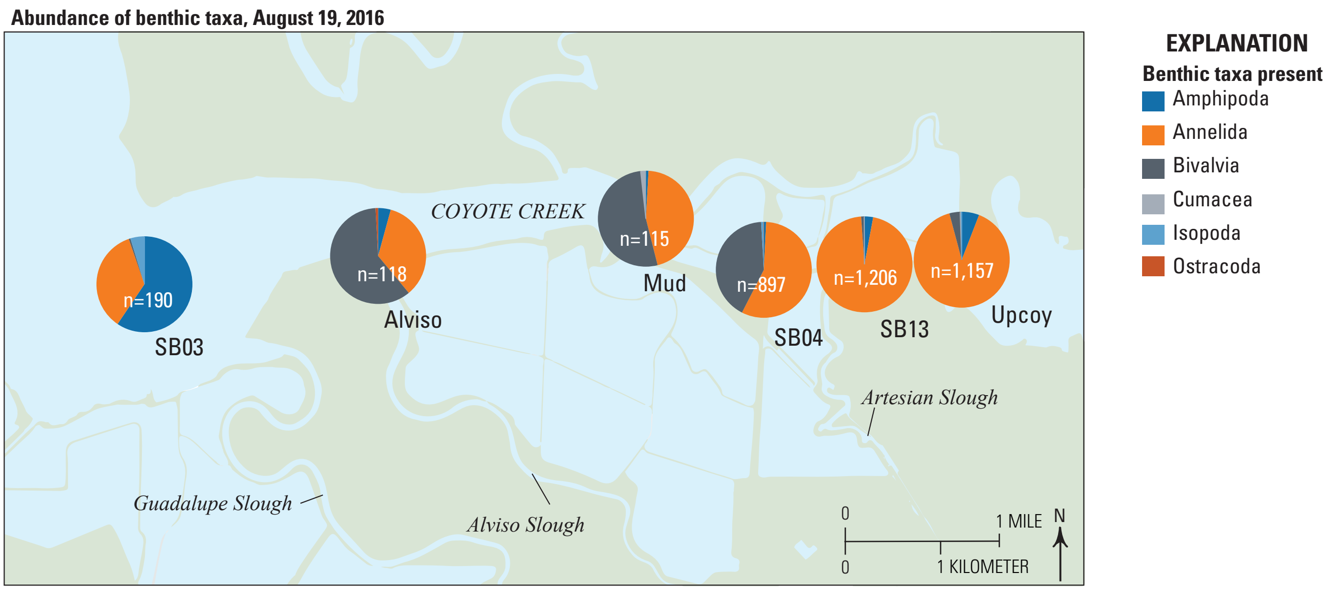
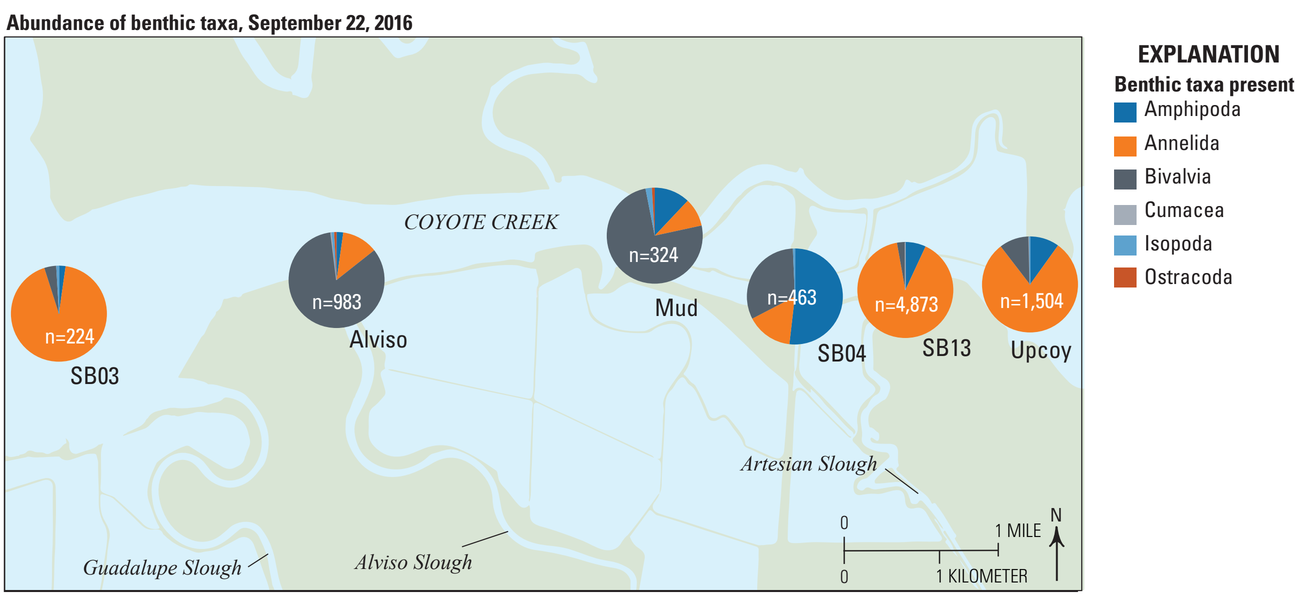


Figure 9. Abundance of major taxa at six benthic sampling stations, measured in July of 2016. Total fauna abundance (n=) is represented in total number of specimen recovered per 0.05 square meter. The proportional representation of taxa at each station is shown via pie chart with taxa represented by different colors.



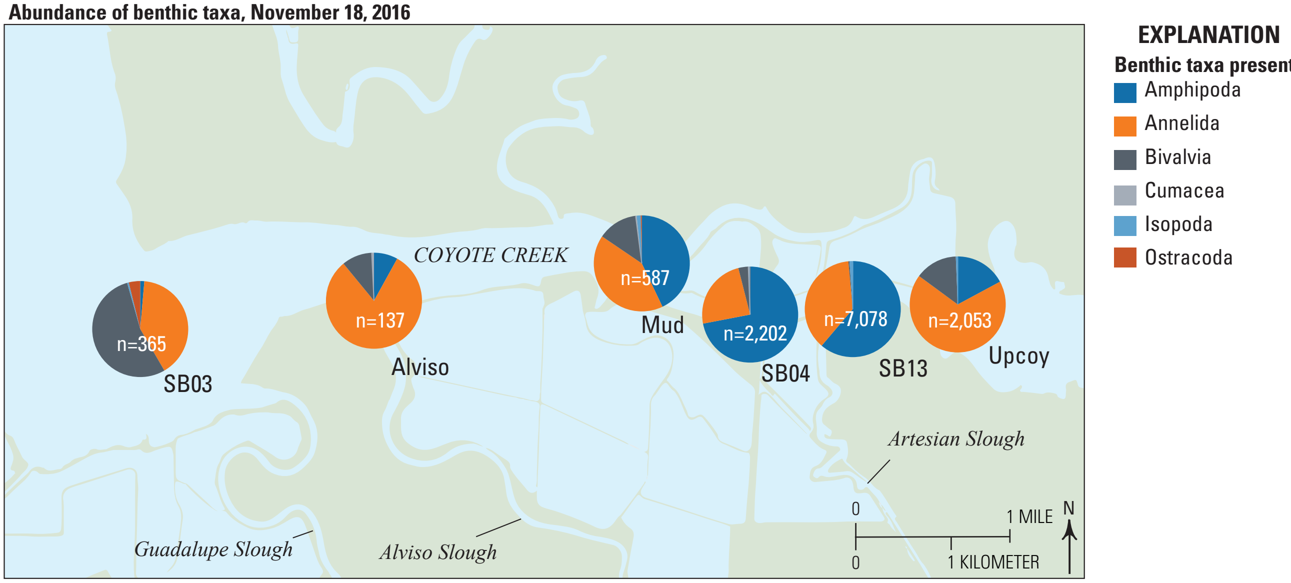
Base map from Tableau

Figure 10. Abundance of major taxa at six benthic sampling stations, measured in August of 2016. Total fauna abundance (n=) is represented in total number of specimen recovered per 0.05 square meter. The proportional representation of taxa at each station is shown via pie chart with taxa represented by different colors.



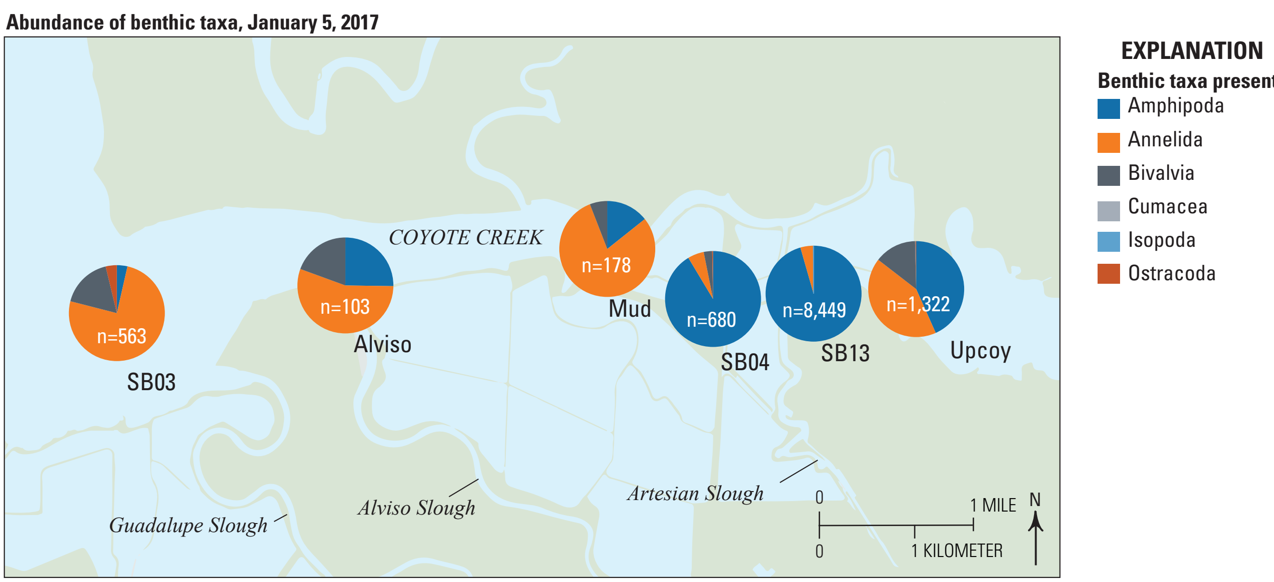
Base map from Tableau

Figure 11. Abundance of major taxa at six benthic sampling stations, measured in September of 2016. Total fauna abundance (n=) is represented in total number of specimen recovered per 0.05 square meter. The proportional representation of taxa at each station is shown via pie chart with taxa represented by different colors.



Base map from Tableau

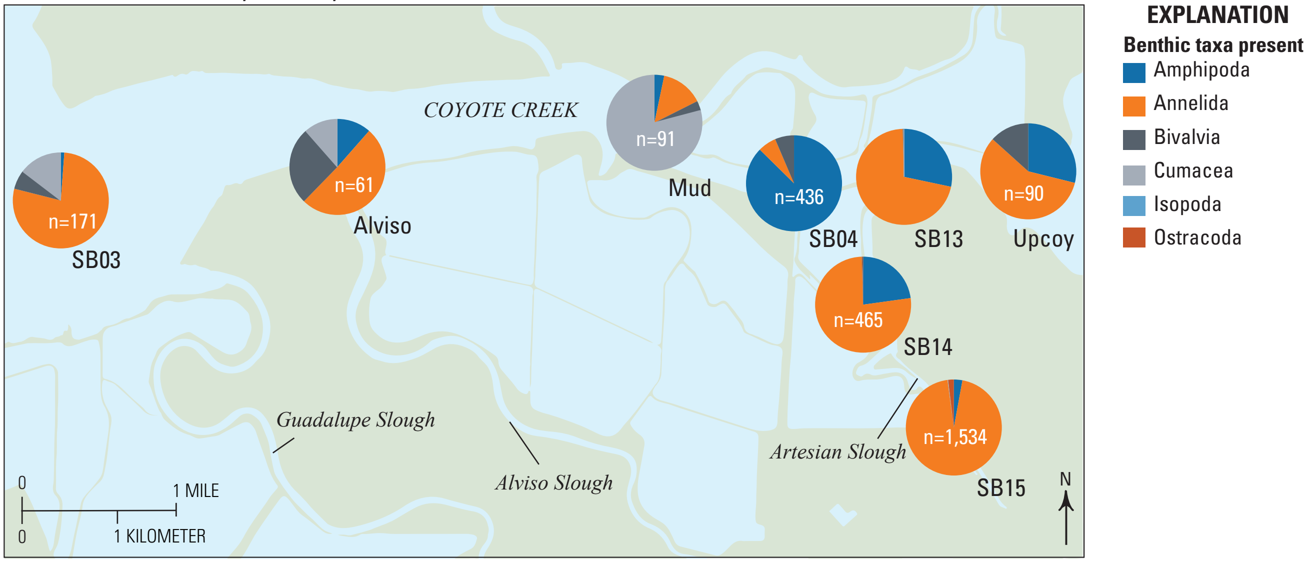
Figure 12. Abundance of major taxa at six benthic sampling stations, measured in November of 2016. Total fauna abundance (n=) is represented in total number of specimen recovered per 0.05 square meter. The proportional representation of taxa at each station is shown via pie chart with taxa represented by different colors.



Base map from Tableau

Figure 13. Abundance of major taxa at six benthic sampling stations, measured in January of 2017. Total fauna abundance (n=) is represented in total number of specimen recovered per 0.05 square meter. The proportional representation of taxa at each station is shown via pie chart with taxa represented by different colors.

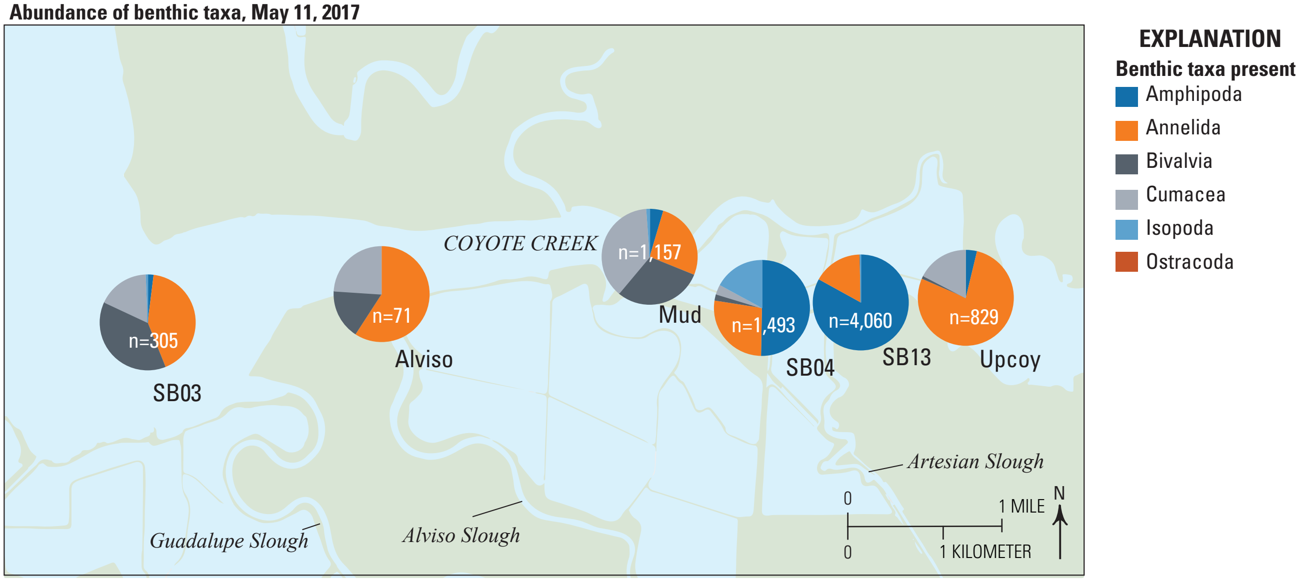
Abundance of benthic taxa, March 20, 2017



Base map from Tableau

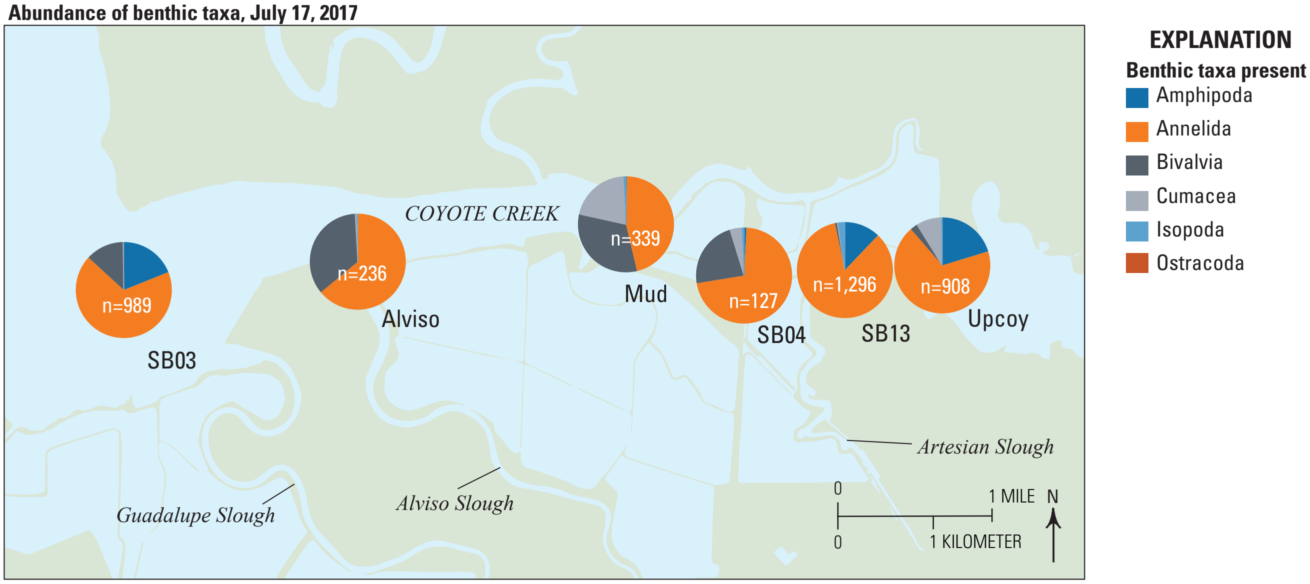
Figure 14. Abundance of major taxa at six benthic sampling stations, measured in March of 2017. Total fauna abundance (n=) is represented in total number of specimen recovered per 0.05 square meter. The proportional representation of taxa at each station is shown via pie chart with taxa represented by different colors.

Abundance of benthic taxa, May 11, 2017



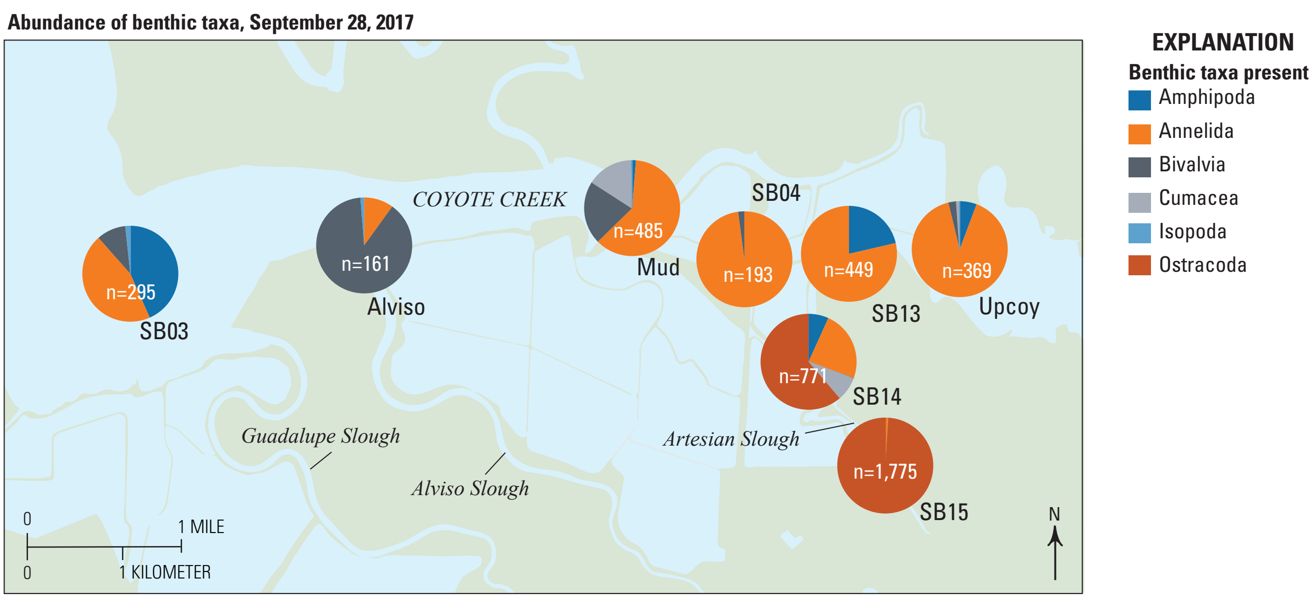
Base map from Tableau

Figure 15. Abundance of major taxa at six benthic sampling stations, measured in May of 2017. Total fauna abundance (n=) is represented in total number of specimen recovered per 0.05 square meter. The proportional representation of taxa at each station is shown via pie chart with taxa represented by different colors.



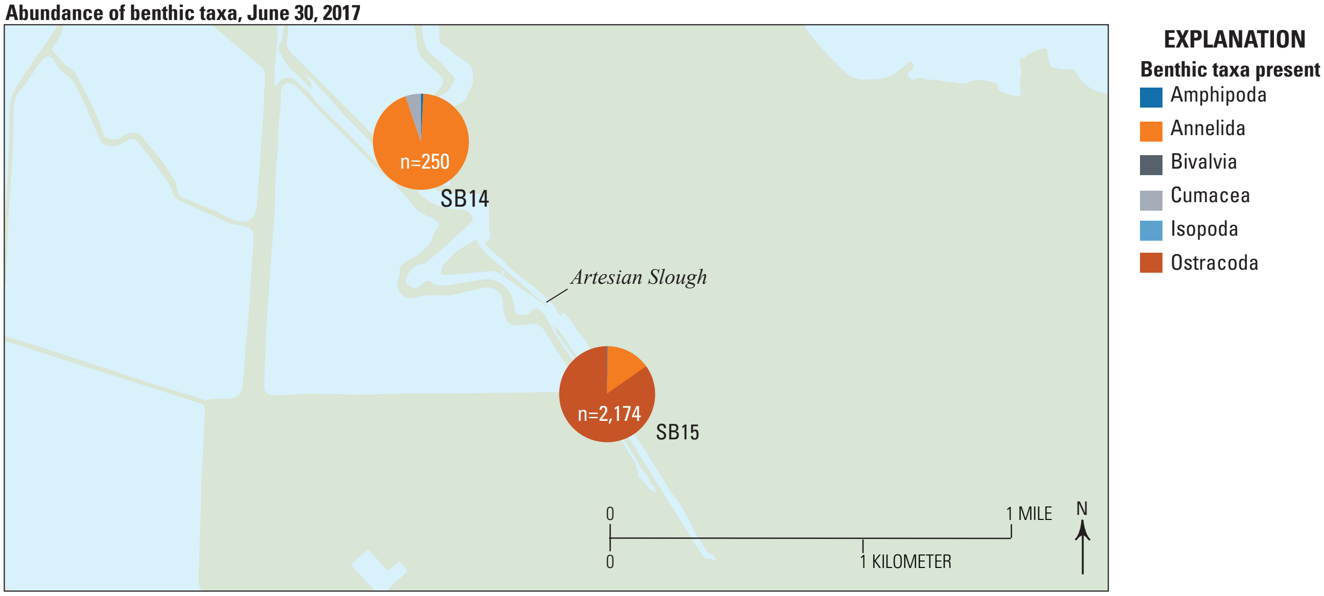
Base map from Tableau

Figure 16. Abundance of major taxa at six benthic sampling stations, measured in July of 2017. Total fauna abundance (n=) is represented in total number of specimen recovered per 0.05 square meter. The proportional representation of taxa at each station is shown via pie chart with taxa represented by different colors.



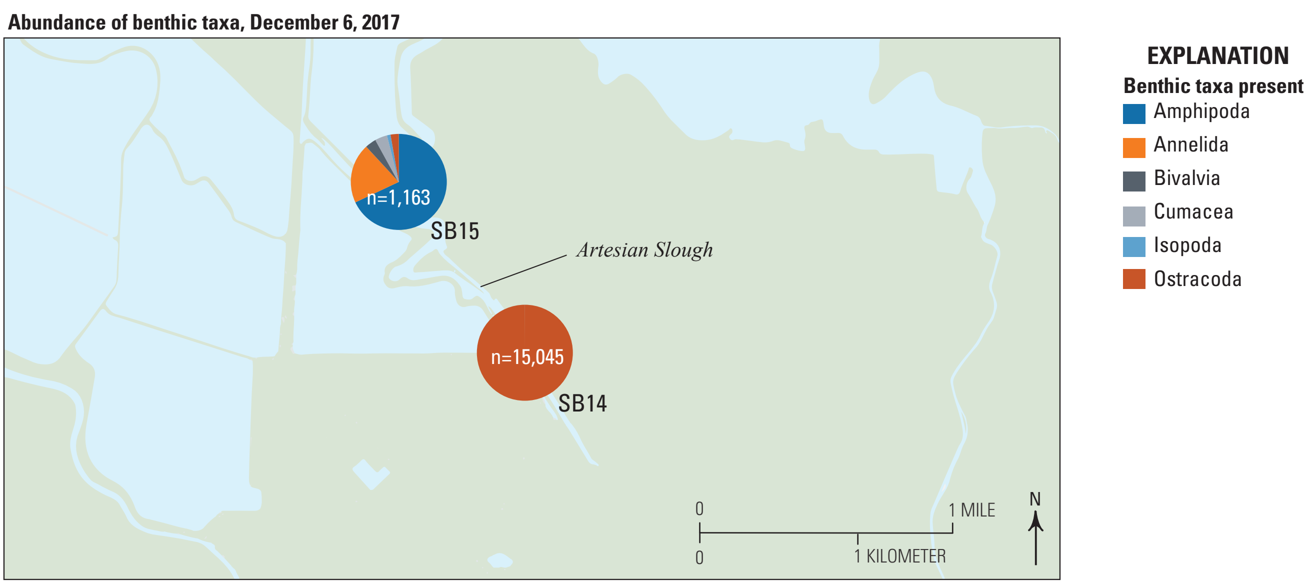
Base map from Tableau

Figure 17. Abundance of major taxa at six benthic sampling stations, measured in September of 2017. Total fauna abundance (n=) is represented in total number of specimen recovered per 0.05 square meter. The proportional representation of taxa at each station is shown via pie chart with taxa represented by different colors.



Base map from Tableau

Figure 18. Abundance of major taxa at stations SB14 and SB15. measured in June of 2017. Total fauna abundance (n=) is represented in total number of specimen recovered per 0.05 square meter. The proportional representation of taxa at each station is shown via pie chart with taxa represented by different colors.



Base map from Tableau

Figure 19. Abundance of major taxa at stations SB14 and SB15, measured in December of 2017. Total fauna abundance (n=) is represented in total number of specimen recovered per 0.05 square meter. The proportional representation of taxa at each station is shown via pie chart with taxa represented by different colors.

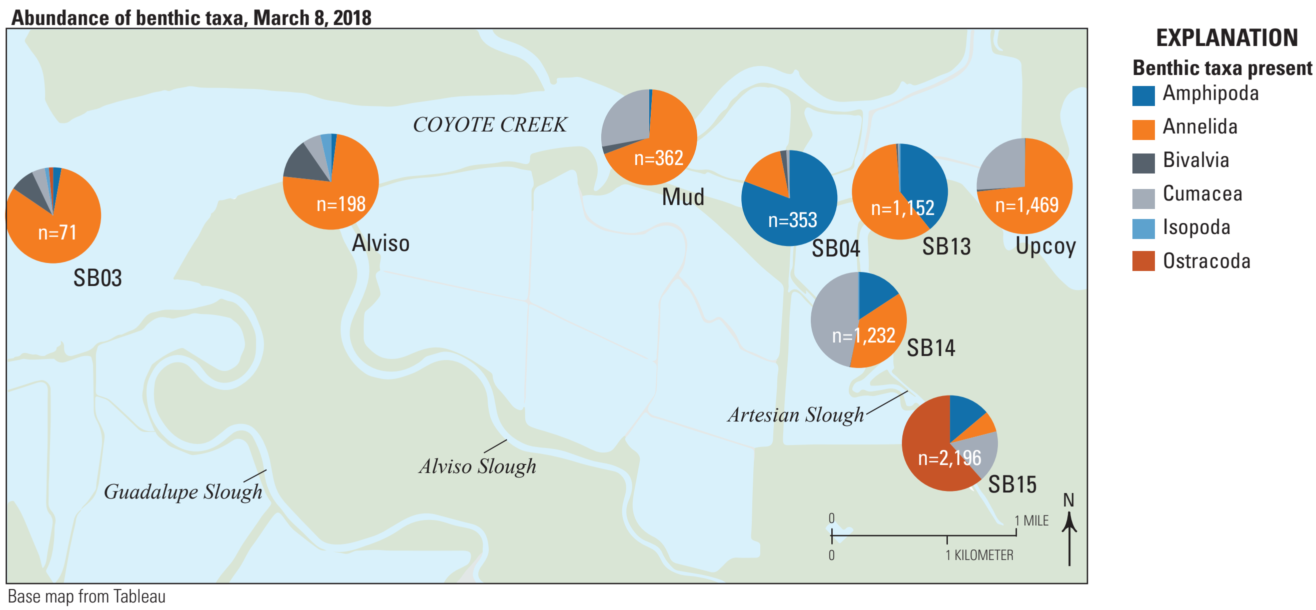


Figure 20. Abundance of major taxa at six benthic sampling stations, measured in March of 2018. Total fauna abundance (n=) is represented in total number of specimen recovered per 0.05 square meter. The proportional representation of taxa at each station is shown via pie chart with taxa represented by different colors.

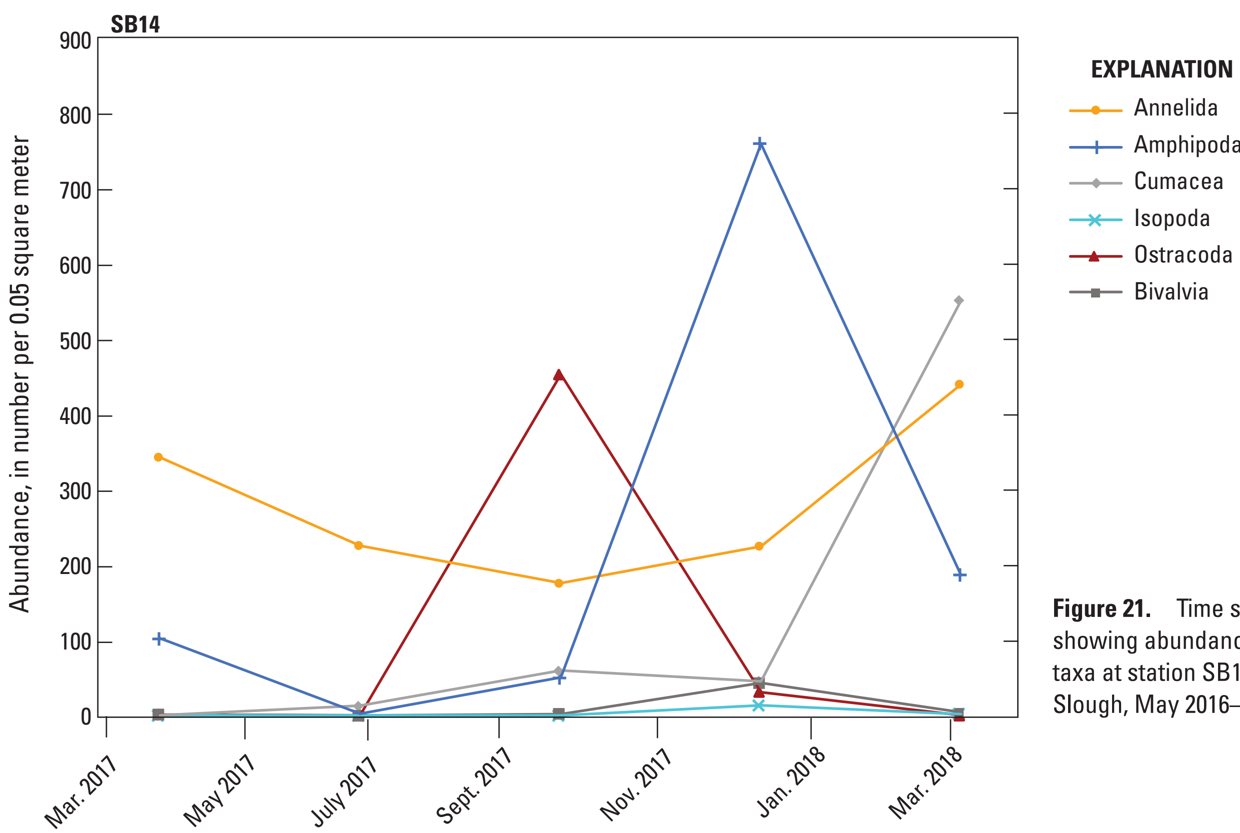


Figure 21. Time series graph showing abundance of major taxa at station SB14 in Artesian Slough, May 2016–March 2018.

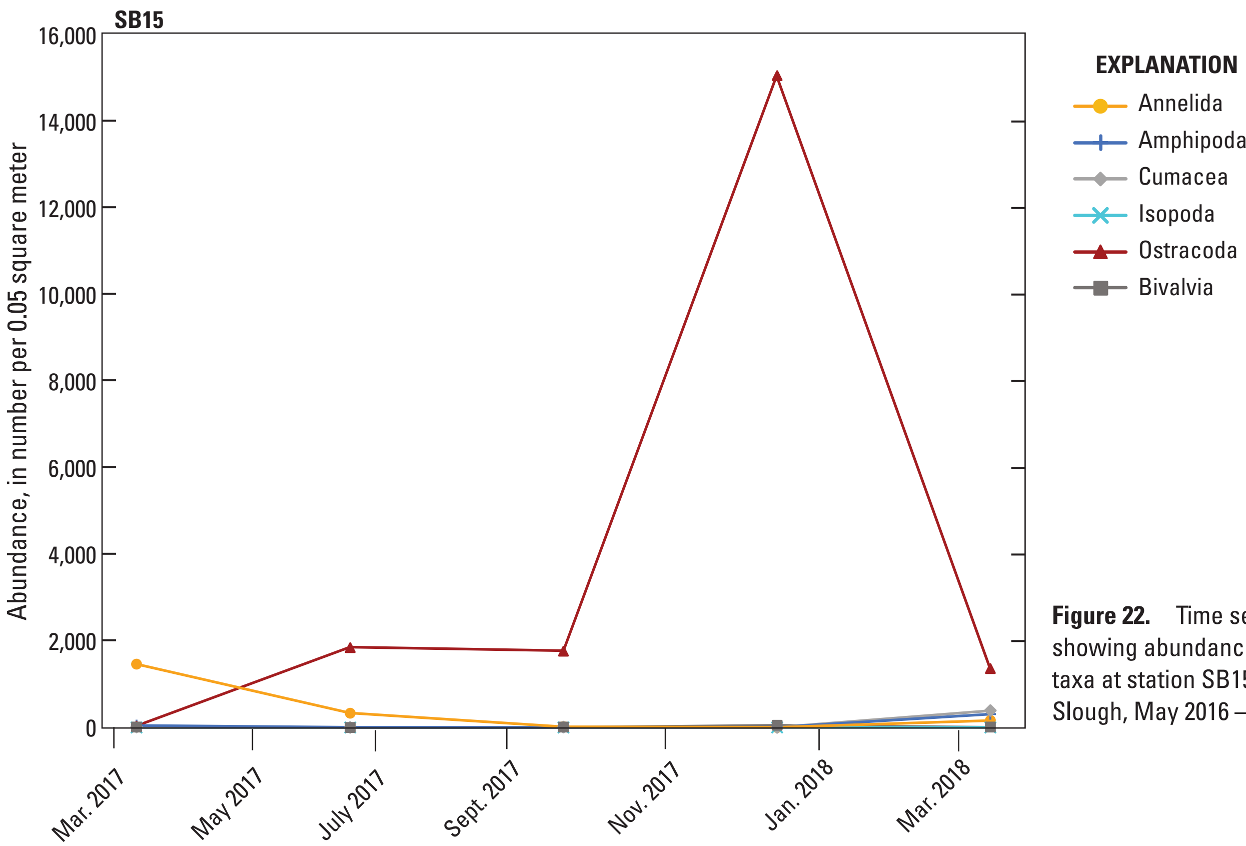


Figure 22. Time series graph showing abundance of major taxa at station SB15 in Artesian Slough, May 2016 –March 2018.

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Tables

Table 1. Species list and abundance at sampling station SB03, southern San Francisco Bay, California, May 2016–March 2018.

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table, despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date												
	05-25-16	07-11-16	08-19-16	09-22-16	11-18-16	01-05-17	03-20-17	05-11-17	07-17-17	09-28-17	11-09-17	01-09-18	03-08-18
PHYLUM CNIDARIA													
Class Anthozoa													
Actiniaria unid. spp	1	49	18	11	23	14	0	0	0	0	0	0	0
Diadumene sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Flosmaris grandis Hand & Bushnell 1967	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM PLATYHELMINTHES													
Class Turbellaria													
Girardia tigrine (Girard, 1850)	0	0	0	0	0	0	0	0	0	0	0	0	0
Turbellaria unid. spp.	0	0	4	0	0	0	0	0	0	0	0	0	0
PHYLUM NEMATODA													
Nematoda unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM ANNELIDA													
Class Oligochaeta													
Naididae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Oligochaeta unid. spp.	0	78	0	10	5	24	5	22	25	0	26	6	0
Tubificidae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Order Hirudinida													
Gloiobdella elongata (Castle 1900)	0	0	0	0	0	0	0	0	0	0	0	0	0
Helobdella stagnalis (Linneaus 1758)	0	0	0	0	0	0	0	0	0	0	0	0	0
Helobdella triserialis (E. Blanchard 1849)	0	0	0	0	0	0	0	0	0	0	0	0	0
Mooreobdella microstoma (Moore 1901)	0	0	0	0	0	0	0	0	0	0	0	0	0
Placobdella montifera (Moore 1906)	0	0	0	0	0	0	0	0	0	0	0	0	0
Class Polychaeta													
Acmira catherinae (Laubier 1967)	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 1. Species list and abundance at sampling station SB03, southern San Francisco Bay, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table, despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date												
	05-25-16	07-11-16	08-19-16	09-22-16	11-18-16	01-05-17	03-20-17	05-11-17	07-17-17	09-28-17	11-09-17	01-09-18	03-08-18
Class Polychaeta—Continued													
Acmira lopezi (Berkeley & and Berkeley 1956)	0	0	0	0	0	0	0	0	0	0	0	0	0
Alitta brandti Malmgren 1865	0	0	0	0	0	0	0	0	0	0	0	0	0
Alitta succinea (Leuckart 1847)	1	6	8	8	10	0	4	4	3	2	3	1	1
Amaeana sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Armandia brevis (Moore 1906)	0	0	0	0	0	0	0	0	0	0	0	0	0
Boccardiella ligerica (Ferronnière, 1898)	0	0	0	0	0	0	0	0	0	0	0	0	0
Capitella capitata (Frabricius 1780) complex	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirratulidae unid. spp.	0	0	0	0	0	3	0	0	0	0	0	0	0
Cirriformia moorei Blacke 1996	0	1	0	0	0	0	0	0	0	0	0	0	0
Cossura sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipolydora brachycephala Hartman 1936	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipolydora caulleryi (Mesnil 1897)	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipolydora socialis (Schmarda 1861)	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipolydora unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Eteone californica Hartman 1936	0	0	0	0	0	0	0	0	0	0	0	0	0
Eteone lighti Hartman 1936	0	13	0	2	1	2	0	3	7	7	8	13	0
Euchone limnicola Reish 1959	0	0	0	1	4	6	0	0	0	0	0	0	4
Exogone lourei Berkeley & Berkeley 1938	0	16	2	2	1	13	0	0	0	0	0	0	0
Glycera americana Leidy 1855	0	0	0	0	0	0	0	0	0	0	0	0	0
Glycinde armigera Moore 1911	0	0	0	0	0	0	0	0	0	0	0	0	0
Glycinde picta Berkele 1927	0	3	0	0	0	0	0	0	0	0	0	0	0
Glycinde sp. SF1	0	0	0	0	0	0	0	0	0	0	0	0	0
Harmothoe imbricata (Linneaus 1767)	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 1. Species list and abundance at sampling station SB03, southern San Francisco Bay, California, May 2016–March 2018.—Continued

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	05-25-16	07-11-16	08-19-16	09-22-16	11-18-16	01-05-17	03-20-17	05-11-17	07-17-17	09-28-17	11-09-17	01-09-18	03-08-18
Class Polychaeta—Continued													
Hediste limnicola (Johnson 1903)	0	0	0	0	0	4	4	0	0	0	0	0	0
Heteromastus filiformis (Claparède 1864)	1	6	1	10	7	12	19	33	93	19	106	45	1
Laonome calida Capa 2007	0	0	0	0	0	0	0	0	0	0	0	0	28
Leitoscoloplos pugettensis (Pettibone 1957)	0	0	0	0	0	0	0	0	0	0	0	0	0
Lumbrineris inflata Moore 1911	0	0	0	0	0	0	0	0	0	0	0	0	0
Manayunkia speciosa Leidy 1859	0	0	0	0	0	0	0	0	0	0	0	0	0
Marenzelleria neglecta Sikoski & Bick 2004	0	0	0	0	0	0	0	0	0	0	0	0	0
Megasyllis nipponica (Imajima 1966)	0	0	0	0	0	0	0	0	0	0	0	0	0
Marphysa sanguinea (Montagu 1813)	0	0	0	0	0	0	0	0	0	0	0	0	0
Neoamphitrite sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Nephtys caecoides Hartman 1938	0	0	0	0	0	0	0	0	0	0	0	0	0
Nephtys cornuta (Berkeley & Berkeley 1945)	0	0	0	0	0	0	0	0	0	0	0	0	0
Nereis pelagica neonigripes Hartman 1936	0	0	0	0	0	0	0	0	0	0	0	0	0
Paleanotus bellis (Johnson 18970	0	0	0	0	0	0	0	0	0	0	0	0	0
Pectinaria californiensis Hartman 1941	0	0	0	0	0	0	0	0	0	0	0	0	0
Pholoides aspera (Johnson 1897)	0	0	0	0	0	0	0	0	0	0	0	0	0
Phyllodoce groenlandica Örsted 1842	0	0	0	0	0	0	0	0	0	0	0	0	0
Pista pacifica Berkeley & Berkeley 1942	0	0	0	0	0	0	0	0	0	0	0	0	0
Platynereis bicanaliculata (Baird 1863)	0	0	0	0	0	0	0	0	0	0	0	0	0
Polycirrus unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 1. Species list and abundance at sampling station SB03, southern San Francisco Bay, California, May 2016–March 2018.—Continued

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Class Polychaeta—Continued													
Polydora cornuta Bosc 1802	0	0	10	0	4	1	0	0	5	2	0	0	0
Pseudopolydora kempi Southern 1921	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudopolydora paucibranchiata (Okuda 1937)	0	0	0	0	0	0	0	0	0	0	0	0	0
Sabaco elongatus (Verrill 1873)	0	0	0	0	0	0	0	0	0	0	0	0	0
Schistomeringos annulate (Moore 1906)	0	0	0	0	0	0	0	0	0	0	0	0	0
Schistomeringos longicornis (Ehlers 1901)	0	0	0	0	0	0	0	0	0	0	0	0	0
Scolelepis squamata (O.F. Muller 1806)	0	0	0	0	0	0	0	0	0	0	0	0	0
Scoletoma luti (Berkeley & Berkeley 1945)	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerosyllis californiensis Hartman 1966	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerosyllis sp. *A*	0	0	0	0	0	0	0	0	0	0	0	0	0
Spiophanes duplex (Chamberlin 1919)	0	0	0	0	0	0	0	0	0	0	0	0	0
Streblospio benedicti Webster 1879	1	1519	46	175	115	359	101	66	539	103	189	178	24
Tharyx parvus Barkeley 1929	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM ARTHROPODA													
Class Crustacea													
SubClass Copepoda													
Cyclopid sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
SubClass Ostracoda													
Candona sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Cyclocypris sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Cypricercus sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Cyprideis sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 1. Species list and abundance at sampling station SB03, southern San Francisco Bay, California, May 2016–March 2018.—Continued

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SubClass Ostracoda —Continued													
Eucypris sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Eusarsiella zostericola (Cushman 1906)	0	7	0	0	14	21	0	0	0	0	0	3	1
Herpetocypris brevicaudata Kaufmann 1900	0	0	0	0	0	0	0	0	0	0	0	0	0
Isocypris sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
SubClass Cirripedia													
Balanus improvisus Darwin 1854	0	0	0	0	0	0	0	0	0	0	0	0	0
SubClass Malacostraca													
Order Mysidacea													
Acanthomysis aspera Li 1964	0	0	0	0	0	0	0	0	0	0	0	0	0
Alienacanthomysis macropsis (W. Tattersall 1932)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hyperacanthomysis longirostris (Li 1936)	0	0	0	0	0	0	0	0	1	0	0	0	0
Neomysis japonica Nakazawa 1910	0	0	0	0	0	0	0	0	0	0	0	0	0
Neomysis kadiakensis Ortmann 1908	0	0	0	0	0	0	0	0	0	0	0	0	2
Neomysis mercedis Holmes 1896	0	0	0	0	0	0	0	0	0	0	0	0	0
Order Cumacea													
Cumella vulgaris Hart 1930	0	0	0	0	0	0	0	0	0	0	0	0	0
Eudorella pacifica Hart 1930	0	0	0	0	0	0	0	0	0	0	0	0	0
Nippoleucon hinumensis (Gamo 1967)	0	12	0	0	0	1	25	53	2	0	13	68	3
Order Tanaidacea													
Sinelobus spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Order Isopoda													
Gnorimosphaeroma insulare (Van Name 1940)	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 1. Species list and abundance at sampling station SB03, southern San Francisco Bay, California, May 2016–March 2018.—Continued

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Order Isopoda—Continued													
Gnorimosphaeroma oregonensis Dana 1853	1	0	1	0	0	0	0	0	0	0	0	0	0
Paranthura japonica Richardson 1909	0	1	8	2	2	0	0	0	0	0	0	0	0
Synidotea laevidorsalis (Miers 1881)	0	3	0	0	0	0	0	2	0	5	1	0	1
Order Amphipoda													
Americhelidium shoemakeri (Mills 1962)	0	0	0	0	0	0	0	0	0	0	0	0	0
Americorophium spinicorne (Stimpson 1857)	26	0	0	0	0	0	1	0	0	0	0	0	0
Americorophium stimpsoni (Shoemaker 1941)	0	0	0	0	0	0	0	2	0	0	0	0	0
Ampelisca abdita (Mills 1964)	0	27	0	3	3	1	0	3	92	2	0	1	0
Ampelisca lobate Holmes 1908	0	0	0	0	0	0	0	0	1	0	0	0	0
Ampithoe plumulosa Shoemaker 1938	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampithoe valida Smith 1873	0	0	10	0	0	0	0	0	0	0	0	0	0
Caprella mendax Mayer 1903	0	0	0	0	0	0	0	0	0	0	0	0	0
Caprella scaura Templeton 1836	0	0	0	0	0	0	0	0	0	0	0	0	0
Crangonyx floridanus Bousfield 1963	0	0	0	0	0	0	0	0	0	0	0	0	0
Eogammarus confervicolus (Stimpson 1856)	0	0	0	0	0	0	0	0	0	0	0	0	0
Eusiroidae unid. spp.	0	0	10	0	0	0	0	0	0	0	0	0	0
Gammarus daiberi (Bousfield 1969)	0	0	0	0	0	0	0	0	0	0	0	0	0
Gnathopleustes pugettensis (Dana 1853)	0	0	0	0	0	0	0	0	0	0	0	0	0
Grandidierella japonica Stephensen 1938	3	12	1	0	0	9	1	1	21	0	0	0	0
Grandifoxus grandis (Stimpson 1856)	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 1. Species list and abundance at sampling station SB03, southern San Francisco Bay, California, May 2016–March 2018.—Continued

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Order Amphipoda—Continued													
Hyalella sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Melita nitida Smith 1873	0	0	0	0	0	0	0	0	0	0	0	0	0
Monocorophium acherusicum Costa 1853	26	44	92	2	2	10	0	0	73	125	2	12	2
Monocorophium insidiosum (Crawford 1937)	0	0	0	0	0	0	0	0	0	0	0	0	0
Monocorophium uenoi (Stephensen 1932)	0	0	0	0	0	0	0	0	0	0	0	0	0
Paradexamine sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Photis brevipes Shoemaker 1942	0	0	0	0	0	0	0	0	0	0	0	0	0
Sinocorophium alienense (Chapman 1988)	0	0	0	0	0	0	0	0	0	1	0	0	0
Sinocorophium heteroceratum (Yu 1938)	1	0	0	0	0	0	0	0	0	0	0	0	0
Stenothoe valida Dana 1852	0	0	0	0	0	0	0	0	0	0	0	0	0
Talitridae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Order Decapoda													
Crangon franciscorum Stimpson 1856	0	0	0	0	0	0	0	0	0	0	0	0	0
Decopoda unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Palaemon modestus (Heller 1862)	0	0	0	0	0	0	0	0	0	0	0	0	0
Palaemon macrodactylus Rathbun 1902	0	0	0	0	0	0	0	0	0	0	0	0	0
Class Insecta													
Family Chironomidae													
Chironomidae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM MOLLUSCA													
Class Gastropoda													
Melanochlamys diomedea (Bergh 1894)	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 1. Species list and abundance at sampling station SB03, southern San Francisco Bay, California, May 2016–March 2018.—Continued

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Class Gastropoda—Continued													
Nudibranchia unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Okenia plana Baba 1960	0	0	0	0	0	0	0	0	0	0	0	0	0
Onchidoris bilamellata (Linnaeus 1767)	0	0	0	0	0	0	0	0	0	0	0	0	0
Philine auriformis Suter 1909	0	0	0	0	0	0	0	0	0	0	0	0	0
SubClass Pulmonata													
Ferrissia californica (Rowell 1863)	0	0	0	0	0	0	0	0	0	0	0	0	0
Gyraulus circumstriatus (Tryon 1866)	0	0	0	0	0	0	0	0	0	0	0	0	0
Helisoma anceps (Menke 1830)	0	0	0	0	0	0	0	0	0	0	0	0	0
Lymnaea humilis (Say *1825)*	0	0	0	0	0	0	0	0	0	0	0	0	0
Lymnaea columella (Say 1817)	0	0	0	0	0	0	0	0	0	0	0	0	0
Menetus dilatatus (Gould 1841)	0	0	0	0	0	0	0	0	0	0	0	0	0
Physa sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Radix auricularia (Linnaeus 1758)	0	0	0	0	0	0	0	0	0	0	0	0	0
SuperFamily Hydrobioidea													
Assiminea californica (Tryon 1865)	0	0	0	0	0	0	0	0	0	0	0	0	0
Boonea bisuturalis (Say 1822)	0	0	0	0	0	0	0	0	0	0	0	0	0
Crepidula plana Say 1822	0	0	0	0	0	0	0	0	0	0	0	0	0
Epitonium sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Fluminicola sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Nassarius obsoletus (Say 1822)	0	0	0	0	0	1	0	0	0	0	0	0	0
Odostomia fetella Dall & Bartsch 1909	0	0	0	0	0	0	0	0	0	0	0	0	0
Class Bivalvia													
Arcuatula senhousia (Benson 1842)	0	1	0	0	0	0	0	0	0	0	0	0	0
Corbicula fluminea (O. F. Müller 1774)	0	0	0	0	0	0	0	0	0	0	0	0	0
Gemma gemma (Totten 1834)	0	76	0	8	180	87	11	88	39	5	7	16	3

Table 1. Species list and abundance at sampling station SB03, southern San Francisco Bay, California, May 2016–March 2018.—Continued

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Class Bivalvia—Continued													
Macoma petalum (Valenciennes 1821)	0	0	0	0	0	0	0	7	2	0	7	1	1
Musculium transversum (Say 1829)	0	0	0	0	0	0	0	0	0	0	0	0	0
Mya arenaria Linnaeus 1758	0	0	0	0	0	0	0	0	0	0	0	0	0
Pisidium casertanum (Poli 1791)	0	0	0	0	0	0	0	0	0	0	0	0	0
Pisidium compressum Prime 1852	0	0	0	0	0	0	0	0	0	0	0	0	0
Potamocorbula amurensis (Shrenck 1861)	1	39	1	1	10	5	0	21	86	24	2	8	2
Theora lubrica Gould 1861	0	0	0	0	0	0	0	0	0	0	0	0	0
Venerupis philippinarum (A. Adams & Reeve 1850)	0	3	0	0	7	5	0	0	1	0	0	0	0
PHYLUM CHORDATA													
Class Ascidacea													
Molgula manhattensis (De Kay 1843)	0	0	0	0	0	0	0	0	0	0	0	0	0
Styela clava (Herdman 1881)	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM ECHINODERMATA													
Class Ophiuroidea													
Amphiuridae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2. Species list and abundance at sampling station Alviso, Alviso Slough, California, May 2016–March 2018.

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

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PHYLUM CNIDARIA													
Class Anthozoa													
Actiniaria unid. spp	1	1	1	1	0	0	0	0	0	0	0	0	0
Diadumene sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Flosmaris grandis Hand & Bushnell 1967	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM PLATYHELMINTHES													
Class Turbellaria													
Girardia tigrine (Girard, 1850)	0	0	0	0	0	0	0	0	0	0	0	0	0
Turbellaria unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM NEMATODA													
Nematoda unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM ANNELIDA													
Class Oligochaeta													
Naididae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Oligochaeta unid. spp.	48	116	26	61	100	36	28	41	144	14	114	51	127
Tubificidae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Order Hirudinida													
Gloiobdella elongata (Castle 1900)	0	0	0	0	0	0	0	0	0	0	0	0	0
Helobdella stagnalis (Linneaus 1758)	0	0	0	0	0	0	0	0	0	0	0	0	0
Helobdella triserialis (E. Blanchard 1849)	0	0	0	0	0	0	0	0	0	0	0	0	0
Mooreobdella microstoma (Moore 1901)	0	0	0	0	0	0	0	0	0	0	0	0	0
Placobdella montifera (Moore 1906)	0	0	0	0	0	0	0	0	0	0	0	0	0
Class Polychaeta													
Acmira catherinae (Laubier 1967)	0	0	0	0	0	0	0	0	0	0	0	0	0
Acmira lopezi (Berkeley & and Berkeley 1956)	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2. Species list and abundance at sampling station Alviso, Alviso Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date												
	05-25-16	07-11-16	08-19-16	09-22-16	11-18-16	01-05-17	03-20-17	05-11-17	07-17-17	09-28-17	11-09-17	01-09-18	03-08-18
Class Polychaeta—Continued													
Alitta brandti Malmgren 1865	0	0	0	0	0	0	0	0	0	0	0	0	0
Alitta succinea (Leuckart 1847)	3	1	1	4	0	0	1	0	0	0	0	0	1
Amaeana sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Armandia brevis (Moore 1906)	0	0	0	0	0	0	0	0	0	0	0	0	0
Boccardiella ligerica (Ferronnière, 1898)	0	0	0	0	0	0	0	0	1	0	0	0	0
Capitella capitata (Frabricius 1780) complex	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirratulidae unid. spp.	2	0	0	2	1	0	0	0	0	0	0	0	0
Cirriformia moorei Blacke 1996	0	0	0	0	0	0	0	0	0	0	0	0	0
Cossura sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipolydora brachycephala Hartman 1936	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipolydora caulleryi (Mesnil 1897)	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipolydora socialis (Schmarda 1861)	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipolydora unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Eteone californica Hartman 1936	0	0	0	0	0	0	0	0	0	0	0	0	0
Eteone lighti Hartman 1936	5	1	0	0	0	6	0	0	0	0	5	8	0
Euchone limnicola Reish 1959	0	0	0	0	0	0	0	0	0	0	0	0	0
Exogone lourei Berkeley & Berkeley 1938	0	0	0	0	0	0	0	0	0	0	0	0	0
Glycera americana Leidy 1855	0	0	0	0	0	0	0	0	0	0	0	0	0
Glycinde armigera Moore 1911	0	0	0	0	0	0	0	0	0	0	0	0	0
Glycinde picta Berkele 1927	0	0	0	1	0	0	0	0	0	0	0	0	0
Glycinde sp. SF1	0	0	0	0	0	0	0	0	0	0	0	0	0
Harmothoe imbricata (Linneaus 1767)	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2. Species list and abundance at sampling station Alviso, Alviso Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

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	05-25-16	07-11-16	08-19-16	09-22-16	11-18-16	01-05-17	03-20-17	05-11-17	07-17-17	09-28-17	11-09-17	01-09-18	03-08-18
Class Polychaeta—Continued													
Hediste limnicola (Johnson 1903)	0	0	0	0	0	0	0	0	0	0	0	0	0
Heteromastus filiformis (Claparède 1864)	5	21	10	16	3	5	0	0	6	2	0	5	4
Laonome calida Capa 2007	0	0	0	0	0	0	0	0	0	0	0	0	0
Leitoscoloplos pugettensis (Petti-bone 1957)	0	0	0	0	0	0	0	0	0	0	0	0	0
Lumbrineris inflata Moore 1911	0	0	0	0	0	0	0	0	0	0	0	0	0
Manayunkia speciosa Leidy 1859	0	0	0	0	0	0	0	0	0	0	0	0	0
Marenzelleria neglecta Sikoski & Bick 2004	0	0	0	0	0	0	0	0	0	0	0	0	0
Marphysa sanguinea (Montagu 1813)	0	0	0	0	0	0	0	0	0	0	0	0	0
Megasyllis nipponica (Imajima 1966)	0	0	0	0	0	0	0	0	0	0	0	0	0
Neoamphitrite sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Nephtys caecoides Hartman 1938	0	0	0	0	0	0	0	0	0	0	0	0	0
Nephtys cornuta (Berkeley & Berke-ley 1945)	0	0	0	0	0	0	0	0	0	0	0	0	0
Nereis pelagica neonigripes Hart-man 1936	0	0	0	0	0	0	0	0	0	0	0	0	0
Paleanotus bellis (Johnson 18970	0	0	0	0	0	0	0	0	0	0	0	0	0
Pectinaria californiensis Hartman 1941	0	0	0	0	0	0	0	0	0	0	0	0	0
Pholoides aspera (Johnson 1897)	0	0	0	0	0	0	0	0	0	0	0	0	0
Phyllodoce groenlandica Örsted 1842	0	0	0	0	0	0	0	0	0	0	0	0	0
Pista pacifica Berkeley & Berkeley 1942	0	0	0	0	0	0	0	0	0	0	0	0	0
Platynereis bicanaliculata (Baird 1863)	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2. Species list and abundance at sampling station Alviso, Alviso Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

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Class Polychaeta—Continued													
Polycirrus unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Polydora cornuta Bosc 1802	1	0	0	0	0	0	0	0	0	0	2	0	0
Pseudopolydora kempi Southern 1921	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudopolydora paucibranchiata (Okuda 1937)	0	0	0	0	0	0	0	0	0	0	0	0	0
Sabaco elongatus (Verrill 1873)	0	0	0	0	0	0	0	0	0	0	0	0	0
Schistomeringos annulate (Moore 1906)	0	0	0	0	0	0	0	0	0	0	0	0	0
Schistomeringos longicornis (Ehlers 1901)	0	0	0	0	0	0	0	0	0	0	0	0	0
Scolelepis squamata (O.F. Muller 1806)	0	0	0	0	0	0	0	0	0	0	0	0	0
Scoletoma luti (Berkeley & Berkeley 1945)	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerosyllis californiensis Hartman 1966	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerosyllis sp. *A*	0	0	0	0	0	0	0	0	0	0	0	0	0
Spiophanes duplex (Chamberlin 1919)	0	0	0	0	0	0	0	0	0	0	0	0	0
Streblospio benedicti Webster 1879	38	9	4	35	7	10	2	1	0	0	120	82	16
Tharyx parvus Barkeley 1929	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM ARTHROPODA													
Class Crustacea													
SubClass Copepoda													
Cyclopid sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
SubClass Ostracoda													
Candona sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Cyclocypris sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Cypricercus sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2. Species list and abundance at sampling station Alviso, Alviso Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

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SubClass Ostracoda—Continued													
Cyprideis sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Eucypris sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Eusarsiella zostericola (Cushman 1906)	2	3	1	8	0	0	0	0	0	0	0	0	0
Herpetocypris brevicaudata Kaufmann 1900	0	0	0	0	0	0	0	0	0	0	0	0	0
Isocypris sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
SubClass Cirripedia													
Balanus improvisus Darwin 1854	0	0	0	0	0	0	0	0	0	0	0	0	0
SubClass Malacostraca													
Order Mysidacea													
Acanthomysis aspera Li 1964	0	0	0	0	0	0	0	0	0	0	0	0	0
Alienacanthomysis macropsis (W. Tattersall 1932)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hyperacanthomysis longirostris (Li 1936)	0	0	0	0	0	0	0	0	0	0	0	3	0
Neomysis japonica Nakazawa 1910	0	0	0	0	0	0	0	0	0	0	0	0	0
Neomysis kadiakensis Ortmann 1908	0	0	0	0	0	0	0	0	0	0	0	0	0
Neomysis mercedis Holmes 1896	0	0	0	0	0	0	0	0	0	0	0	0	0
Order Cumacea													
Cumella vulgaris Hart 1930	0	0	0	0	0	0	0	0	0	0	0	0	0
Eudorella pacifica Hart 1930	0	0	0	0	0	0	0	0	0	0	0	0	0
Nippoleucon hinumensis (Gamo 1967)	17	5	0	2	1	0	7	17	1	0	11	29	12
Order Tanaidacea													
Sinelobus spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Order Isopoda													
Gnorimosphaeroma insulare (Van Name 1940)	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2. Species list and abundance at sampling station Alviso, Alviso Slough, California, May 2016–March 2018.—Continued

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Order Isopoda—Continued													
Gnorimosphaeroma oregonensis Dana 1853	0	0	0	0	0	0	0	0	0	0	0	0	0
Paranthura japonica Richardson 1909	0	0	0	0	0	0	0	0	0	0	0	0	0
Synidotea laevidorsalis (Miers 1881)	1	0	0	9	0	0	0	0	1	2	0	0	7
Order Amphipoda													
Americhelidium shoemakeri (Mills 1962)	0	0	0	0	0	0	0	0	0	0	0	0	0
Americorophium spinicorne (Stimpson 1857)	22	1	0	0	3	0	2	0	0	0	0	0	0
Americorophium stimpsoni (Shoemaker 1941)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampelisca abdita (Mills 1964)	156	8	2	20	0	0	0	0	0	0	0	0	0
Ampelisca lobate Holmes 1908	1	0	0	0	0	0	0	0	0	0	0	0	0
Ampithoe plumulosa Shoemaker 1938	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampithoe valida Smith 1873	0	0	0	0	0	0	0	0	0	0	0	0	0
Caprella mendax Mayer 1903	0	0	0	0	0	0	0	0	0	0	0	0	0
Caprella scaura Templeton 1836	0	0	0	0	0	0	0	0	0	0	0	0	0
Crangonyx floridanus Bousfield 1963	0	0	0	0	0	0	0	0	0	0	0	0	0
Eogammarus confervicolus (Stimpson 1856)	0	0	0	0	0	0	0	0	0	0	0	0	0
Eusiroidae unid. Spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Gammarus daiberi (Bousfield 1969)	0	0	0	0	0	0	0	0	0	0	0	0	0
Gnathopleustes pugettensis (Dana 1853)	0	0	0	0	0	0	0	0	0	0	0	0	0
Grandidierella japonica Stephensen 1938	41	0	1	2	0	0	0	0	0	0	0	1	2
Grandifoxus grandis (Stimpson 1856)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hyalella sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2. Species list and abundance at sampling station Alviso, Alviso Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

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Order Amphipoda—Continued													
Melita nitida Smith 1873	0	0	0	0	0	0	0	0	0	0	0	0	0
Monocorophium acherusicum Costa 1853	68	0	2	0	0	0	0	0	0	0	0	0	0
Monocorophium insidiosum (Crawford 1937)	0	0	0	0	0	0	0	0	0	0	0	0	0
Monocorophium uenoi (Stephensen 1932)	0	0	0	0	0	0	0	0	0	0	0	0	0
Paradexamine sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Photis brevipes Shoemaker 1942	0	0	0	0	0	0	0	0	0	0	0	0	0
Sinocorophium alienense (Chapman 1988)	1	0	0	0	8	26	5	0	0	0	3	1	2
Sinocorophium heteroceratum (Yu 1938)	0	0	0	0	0	0	0	0	0	0	0	0	0
Stenothoe valida Dana 1852	0	0	0	0	0	0	0	0	0	0	0	0	0
Talitridae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Order Decapoda													
Crangon franciscorum Stimpson 1856	0	0	0	0	0	0	0	0	0	0	0	0	0
Palaemon modestus (Heller 1862)	0	0	0	0	0	0	0	0	0	0	0	0	0
Palaemon macrodactylus Rathbun 1902	0	0	0	0	0	0	0	0	0	0	0	0	0
Decopoda unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Class Insecta													
Family Chironomidae													
Chironomidae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM MOLLUSCA													
Class Gastropoda													
Melanochlamys diomedea (Bergh 1894)	0	0	0	0	0	0	0	0	0	0	0	0	0
Nudibranchia unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2. Species list and abundance at sampling station Alviso, Alviso Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

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Class Gastropoda—Continued													
Okenia plana Baba 1960	0	0	0	0	0	0	0	0	0	0	0	0	0
Onchidoris bilamellata (Linnaeus 1767)	0	0	0	0	0	0	0	0	0	0	0	0	0
Philine auriformis Suter 1909	0	0	0	0	0	0	0	0	0	0	0	0	0
SubClass Pulmonata													
Ferrissia californica (Rowell 1863)	0	0	0	0	0	0	0	0	0	0	0	0	0
Gyraulus circumstriatus (Tryon 1866)	0	0	0	0	0	0	0	0	0	0	0	0	0
Helisoma anceps (Menke 1830)	0	0	0	0	0	0	0	0	0	0	0	0	0
Lymnaea humilis (Say *1825)*	0	0	0	0	0	0	0	0	0	0	0	0	0
Lymnaea columella (Say 1817)	0	0	0	0	0	0	0	0	0	0	0	0	0
Menetus dilatatus (Gould 1841)	0	0	0	0	0	0	0	0	0	0	0	0	0
Physa sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Radix auricularia (Linnaeus 1758)	0	0	0	0	0	0	0	0	0	0	0	0	0
SuperFamily Hydrobioidea													
Assiminea californica (Tryon 1865)	0	0	0	0	0	0	0	0	0	0	0	0	0
Boonea bisuturalis (Say 1822)	1	0	0	0	0	0	0	0	0	0	0	0	0
Crepidula plana Say 1822	0	0	0	0	0	0	0	0	0	0	0	0	0
Epitonium sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Fluminicola sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Nassarius obsoletus (Say 1822)	0	0	0	0	0	0	0	0	0	0	0	0	0
Odostomia fetella Dall & Bartsch 1909	0	0	0	0	0	0	0	0	0	0	0	0	0
Class Bivalvia													
Arcuatula senhousia (Benson 1842)	3	0	0	1	0	0	0	0	0	0	0	0	0
Corbicula fluminea (O. F. Müller 1774)	0	0	0	0	0	0	0	0	0	0	0	0	0
Gemma gemma (Totten 1834)	903	166	63	793	0	0	0	0	0	0	0	0	0

Table 2. Species list and abundance at sampling station Alviso, Alviso Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

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Class Bivalvia—Continued													
Macoma petalum (Valenciennes 1821)	5	0	1	2	10	20	11	5	7	1	4	5	3
Musculium transversum (Say 1829)	0	0	0	0	0	0	0	0	0	0	0	0	0
Mya arenaria Linnaeus 1758	0	0	0	0	0	0	0	0	0	0	0	0	0
Pisidium casertanum (Poli 1791)	0	0	0	0	0	0	0	0	0	0	0	0	0
Pisidium compressum Prime 1852	0	0	0	0	0	0	0	0	0	0	0	0	0
Potamocorbula amurensis (Shrenck 1861)	104	6	7	27	4	0	5	7	76	142	4	1	24
Theora lubrica Gould 1861	0	0	0	0	0	0	0	0	0	0	0	0	0
Venerupis philippinarum (A. Adams & Reeve 1850)	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM CHORDATA													
Class Ascidacea													
Molgula manhattensis (De Kay 1843)	0	0	0	0	0	0	0	0	0	0	0	0	0
Styela clava (Herdman 1881)	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM ECHINODERMATA													
Class Ophiuroidea													
Amphiuridae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3. Species list and abundance at sampling station Mud, Coyote Creek, California, May 2016–March 2018.

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date												
	05-25-16	07-11-16	08-19-16	09-22-16	11-18-16	01-05-17	03-20-17	05-11-17	17-17-17	09-28-17	11-09-17	01-09-18	03-08-18
PHYLUM CNIDARIA													
Class Anthozoa													
Actiniaria unid. spp	2	0	0	0	74	1	0	0	0	0	0	0	0
Diadumene sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Flosmaris grandis Hand & Bushnell 1967	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM PLATYHELMINTHES													
Class Turbellaria													
Girardia tigrine (Girard, 1850)	0	0	0	0	0	0	0	0	0	0	0	0	0
Turbellaria unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM NEMATODA													
Nematoda unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM ANNELIDA													
Class Oligochaeta													
Naididae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Oligochaeta unid. spp.	102	7	47	3	143	63	10	197	130	42	165	42	67
Tubificidae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Order Hirudinida													
Gloiobdella elongata (Castle 1900)	0	0	0	0	0	0	0	0	0	0	0	0	0
Helobdella stagnalis (Linneaus 1758)	0	0	0	0	0	0	0	0	0	0	0	0	0
Helobdella triserialis (E. Blanchard 1849)	0	0	0	0	0	0	0	0	0	0	0	0	0
Mooreobdella microstoma (Moore 1901)	0	0	0	0	0	0	0	0	0	0	0	0	0
Placobdella montifera (Moore 1906)	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3. Species list and abundance at sampling station Mud, Coyote Creek, California, May 2016–March 2018.—Continued

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	05-25-16	07-11-16	08-19-16	09-22-16	11-18-16	01-05-17	03-20-17	05-11-17	17-17-17	09-28-17	11-09-17	01-09-18	03-08-18
Class Polychaeta													
Alitta brandti Malmgren 1865	0	0	0	0	0	0	0	0	0	0	0	0	0
Alitta succinea (Leuckart 1847)	0	4	0	0	1	1	0	0	0	0	0	0	0
Amaeana sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Acmira catherinae (Laubier 1967)	0	0	0	0	0	0	0	0	0	0	0	0	0
Acmira lopezi (Berkeley & and Berkeley 1956)	0	0	0	0	0	0	0	0	0	0	0	0	0
Armandia brevis (Moore 1906)	0	0	0	0	0	0	0	0	0	0	0	0	0
Boccardiella ligerica (Ferronnière, 1898)	0	0	0	0	0	0	0	11	0	0	0	4	0
Capitella capitata (Frabricius 1780) complex	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirratulidae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirriformia moorei Blacke 1996	0	0	0	0	0	0	0	0	0	0	0	0	0
Cossura sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipolydora brachycephala Hartman 1936	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipolydora caulleryi (Mesnil 1897)	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipolydora socialis (Schmarda 1861)	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipolydora unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Eteone californica Hartman 1936	0	0	0	0	0	0	0	0	0	0	0	0	0
Eteone lighti Hartman 1936	6	3	0	1	20	4	0	0	0	6	4	5	3
Euchone limnicola Reish 1959	0	0	0	0	0	0	0	0	0	0	0	0	0
Exogone lourei Berkeley & Berkeley 1938	0	0	0	0	0	0	0	0	0	0	0	0	0
Glycera americana Leidy 1855	0	0	0	0	0	0	0	0	0	0	0	0	0
Glycinde armigera Moore 1911	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3. Species list and abundance at sampling station Mud, Coyote Creek, California, May 2016–March 2018.—Continued

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Class Polychaeta—Continued													
Glycinde picta Berkele 1927	0	0	0	0	0	0	0	0	0	0	0	0	0
Glycinde sp. SF1	0	0	0	0	0	0	0	0	0	0	0	0	0
Harmothoe imbricata (Linneaus 1767)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hediste limnicola (Johnson 1903)	0	1	0	1	0	0	0	0	0	0	0	0	0
Heteromastus filiformis (Claparède 1864)	2	8	1	17	10	3	0	0	0	0	0	3	0
Laonome calida Capa 2007	0	0	0	0	0	0	0	0	1	0	0	0	0
Leitoscoloplos pugettensis (Pettibone 1957)	0	0	0	0	0	0	0	0	0	0	0	0	0
Lumbrineris inflata Moore 1911	0	0	0	0	0	0	0	0	0	0	0	0	0
Manayunkia speciosa Leidy 1859	0	0	0	0	0	0	0	0	0	0	0	0	0
Marenzelleria neglecta Sikoski & Bick 2004	0	0	0	0	0	0	0	81	6	8	0	0	3
Marphysa sanguinea (Montagu 1813)	0	0	0	0	0	0	0	0	0	0	0	0	0
Megasyllis nipponica (Imajima 1966)	0	0	0	0	0	0	0	0	0	0	0	0	0
Neoamphitrite sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Nephtys caecoides Hartman 1938	0	0	0	0	0	0	0	0	0	0	0	0	0
Nephtys cornuta (Berkeley & Berkeley 1945)	0	0	0	0	0	0	0	0	0	0	0	0	0
Nereis pelagica neonigripes Hartman 1936	0	0	0	0	0	0	0	0	0	0	0	0	0
Paleanotus bellis (Johnson 18970	0	0	0	0	0	0	0	0	0	0	0	0	0
Pectinaria californiensis Hartman 1941	0	0	0	0	0	0	0	0	0	0	0	0	0
Pholoides aspera (Johnson 1897)	0	0	0	0	0	0	0	0	0	0	0	0	0
Phyllodoce groenlandica Örsted 1842	0	0	0	0	0	0	0	0	0	0	0	0	0
Pista pacifica Berkeley & Berkeley 1942	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3. Species list and abundance at sampling station Mud, Coyote Creek, California, May 2016–March 2018.—Continued

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Class Polychaeta—Continued													
Platynereis bicanaliculata (Baird 1863)	0	0	0	0	0	0	0	0	0	0	0	0	0
Polycirrus unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Polydora cornuta Bosc 1802	0	0	0	1	0	0	0	0	0	0	2	1	2
Pseudopolydora kempi Southern 1921	0	0	0	0	0	0	0	0	0	0	0	0	0
Pseudopolydora paucibranchiata (Okuda 1937)	0	0	0	0	0	0	0	0	0	0	0	0	0
Sabaco elongatus (Verrill 1873)	0	0	0	0	0	0	0	0	0	0	0	0	0
Schistomeringos annulate (Moore 1906)	0	0	0	0	0	0	0	0	0	0	0	0	0
Schistomeringos longicornis (Ehlers 1901)	0	0	0	0	0	0	0	0	0	0	0	0	0
Scolelepis squamata (O.F. Muller 1806)	0	0	0	0	0	0	0	0	0	0	0	0	0
Scoletoma luti (Berkeley & Berkeley 1945)	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerosyllis californiensis Hartman 1966	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerosyllis sp. *A*	0	0	0	0	0	0	0	0	0	0	0	0	0
Spiophanes duplex (Chamberlin 1919)	0	0	0	0	0	0	0	0	0	0	0	0	0
Streblospio benedicti Webster 1879	104	117	4	8	70	24	3	18	19	242	14	340	172.0
Tharyx parvus Barkeley 1929	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM ARTHROPODA													
Class Crustacea													
SubClass Copepoda													
Cyclopid sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
SubClass Ostracoda													
Candona sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Cypricercus sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3. Species list and abundance at sampling station Mud, Coyote Creek, California, May 2016–March 2018.—Continued

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SubClass Ostracoda—Continued													
Cyclocypris sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Cyprideis sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Eucypris sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Eusarsiella zostericola (Cushman 1906)	0	0	0	3	2	0	0	0	0	0	0	0	0
Herpetocypris brevicaudata Kaufmann 1900	0	0	0	0	0	0	0	0	0	0	0	0	0
Isocypris sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
SubClass Cirripedia													
Balanus improvisus Darwin 1854	0	0	0	0	0	0	0	0	1	0	0	0	0
SubClass Malacostraca													
Order Mysidacea													
Acanthomysis aspera Li 1964	0	0	0	0	0	0	0	0	0	0	0	0	0
Alienacanthomysis macropsis (W. Tattersall 1932)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hyperacanthomysis longirostris (Li 1936)	0	0	0	0	0	0	0	0	0	0	0	0	0
Neomysis japonica Nakazawa 1910	0	0	0	0	0	0	0	0	0	0	0	0	0
Neomysis kadiakensis Ortmann 1908	0	0	0	0	0	0	0	0	0	0	0	0	0
Neomysis mercedis Holmes 1896	0	0	0	0	0	0	0	0	0	0	0	0	0
Order Cumacea													
Cumella vulgaris Hart 1930	0	0	0	0	0	0	0	0	0	0	0	0	0
Eudorella pacifica Hart 1930	0	0	0	0	0	0	0	0	0	0	0	0	0
Nippoleucon hinumensis (Gamo 1967)	1	0	2	0	2	59	72	437	70	75	88	51	101.0
Order Tanaidacea													
Sinelobus spp.	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3. Species list and abundance at sampling station Mud, Coyote Creek, California, May 2016–March 2018.—Continued

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Order Isopoda													
Gnorimosphaeroma insulare (Van Name 1940)	0	0	0	0	0	0	0	0	0	0	0	0	0
Gnorimosphaeroma oregonensis Dana 1853	0	10	0	6	4	0	0	0	0	0	0	1	0
Paranthura japonica Richardson 1909	0	0	0	0	0	0	0	0	0	0	0	0	0
Synidotea laevidorsalis (Miers 1881)	0	1	0	1	4	0	0	13	3	2	0	0	0
Order Amphipoda													
Americhelidium shoemakeri (Mills 1962)	0	0	0	0	0	0	0	0	0	0	0	0	0
Americorophium spinicorne (Stimpson 1857)	26	0	0	0	0	0	0	0	0	0	0	0	0
Americorophium stimpsoni (Shoemaker 1941)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampelisca abdita (Mills 1964)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampelisca lobate Holmes 1908	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampithoe plumulosa Shoemaker 1938	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampithoe valida Smith 1873	0	0	0	0	0	0	0	0	0	0	0	0	0
Caprella mendax Mayer 1903	0	0	0	0	0	0	0	0	0	0	0	0	0
Caprella scaura Templeton 1836	0	0	0	0	0	0	0	0	0	0	0	0	0
Crangonyx floridanus Bousfield 1963	0	0	0	0	0	0	0	0	0	0	0	0	0
Eogammarus confervicolus (Stimpson 1856)	0	0	0	0	0	0	0	0	0	0	0	0	0
Eusiroidae unid. Spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Gammarus daiberi (Bousfield 1969)	0	1	0	0	0	0	0	1	0	0	0	0	0
Gnathopleustes pugettensis (Dana 1853)	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3. Species list and abundance at sampling station Mud, Coyote Creek, California, May 2016–March 2018.—Continued

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Order Amphipoda—Continued													
Grandidierella japonica Stephensen 1938	1	16	0	25	151	6	1	38	1	3	0	57	4
Grandifoxus grandis (Stimpson 1856)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hyalella sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Melita nitida Smith 1873	0	0	0	0	0	0	0	0	0	0	0	0	0
Monocorophium acherusicum Costa 1853	0	4	1	8	87	0	0	0	0	0	0	0	0
Monocorophium insidiosum (Crawford 1937)	0	0	0	0	0	0	0	0	0	0	0	0	0
Monocorophium uenoi (Stephensen 1932)	0	0	0	0	0	0	0	0	0	0	0	0	0
Paradexamine sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Photis brevipes Shoemaker 1942	0	0	0	0	0	0	0	0	0	0	0	0	0
Sinocorophium alienense (Chapman 1988)	0	0	0	6	14	11	2	14	0	3	2	222	0
Sinocorophium heteroceratum (Yu 1938)	0	0	0	0	0	0	0	0	0	0	0	0	0
Stenothoe valida Dana 1852	0	0	0	0	0	0	0	0	0	0	0	0	0
Talitridae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Order Decapoda													
Crangon franciscorum Stimpson 1856	0	0	0	0	0	0	0	0	0	0	0	0	0
Decopoda unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Palaemon modestus (Heller 1862)	0	0	0	0	0	0	0	0	0	0	0	0	0
Palaemon macrodactylus Rathbun 1902	0	0	0	0	0	0	0	0	0	0	0	0	0
Class Insecta													
Family Chironomidae													
Chironomidae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3. Species list and abundance at sampling station Mud, Coyote Creek, California, May 2016–March 2018.—Continued

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PHYLUM MOLLUSCA													
Class Gastropoda													
Okenia plana Baba 1960	0	0	0	0	0	0	0	0	0	0	0	0	0
Onchidoris bilamellata (Linnaeus 1767)	0	0	0	0	0	0	0	0	0	0	0	0	0
Melanochlamys diomedea (Bergh 1894)	0	0	0	0	0	0	0	0	0	0	0	0	0
Nudibranchia unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Philine auriformis Suter 1909	0	0	0	0	0	0	0	0	0	0	0	0	0
SubClass Pulmonata													
Ferrissia californica (Rowell 1863)	0	0	0	0	0	0	0	0	0	0	0	0	0
Gyraulus circumstriatus (Tryon 1866)	0	0	0	0	0	0	0	0	0	0	0	0	0
Helisoma anceps (Menke 1830)	0	0	0	0	0	0	0	0	0	0	0	0	0
Lymnaea humilis (Say *1825)*	0	0	0	0	0	0	0	0	0	0	0	0	0
Lymnaea columella (Say 1817)	0	0	0	0	0	0	0	0	0	0	0	0	0
Menetus dilatatus (Gould 1841)	0	0	0	0	0	0	0	0	0	0	0	0	0
Physa sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Radix auricularia (Linnaeus 1758)	0	0	0	0	0	0	0	0	0	0	0	0	0
SuperFamily Hydrobioidea													
Assiminea californica (Tryon 1865)	0	0	0	0	0	0	0	0	0	0	0	0	0
Boonea bisuturalis (Say 1822)	0	0	0	0	0	0	0	0	0	0	0	0	0
Crepidula plana Say 1822	0	0	0	0	0	0	0	0	0	0	0	0	0
Epitonium sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Fluminicola sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Nassarius obsoletus (Say 1822)	0	0	0	0	0	0	0	0	0	0	0	0	0
Odostomia fetella Dall & Bartsch 1909	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3. Species list and abundance at sampling station Mud, Coyote Creek, California, May 2016–March 2018.—Continued

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Class Bivalvia													
Arcuatula senhousia (Benson 1842)	1	0	0	0	18	0	0	0	0	0	0	0	0
Corbicula fluminea (O. F. Müller 1774)	0	0	0	0	0	0	0	0	0	0	0	0	0
Gemma gemma (Totten 1834)	57	15	27	13	49	1	0	0	0	0	0	0	0
Macoma petalum (Valenciennes 1821)	7	0	7	0	1	3	0	33	19	5	4	2	0
Musculium transversum (Say 1829)	0	0	0	0	0	0	0	0	0	0	0	0	0
Mya arenaria Linnaeus 1758	0	0	0	0	0	0	0	0	0	0	0	0	0
Pisidium casertanum (Poli 1791)	0	0	0	0	0	0	0	0	0	0	0	0	0
Pisidium compressum Prime 1852	0	0	0	0	0	0	0	0	0	0	0	0	0
Potamocorbula amurensis (Shrenck 1861)	101	306	26	231	11	3	3	314	90	99	0	38	10
Theora lubrica Gould 1861	0	0	0	0	0	0	0	0	0	0	0	0	0
Venerupis philippinarum (A. Adams & Reeve 1850)	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM CHORDATA													
Class Ascidacea													
Molgula manhattensis (De Kay 1843)	0	0	0	0	0	0	0	0	0	0	0	0	0
Styela clava (Herdman 1881)	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM ECHINODERMATA													
Class Ophiuroidea													
Amphiuridae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4. Species list and abundance at sampling station SB04, Coyote Creek, California, May 2016–March 2018.

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

TAXON	Sampling date												
	05-25-16	07-11-16	08-19-16	09-22-16	11-18-16	01-05-17	03-20-17	05-11-17	17-17-17	09-28-17	11-09-17	01-09-18	03-08-18
PHYLUM CNIDARIA													
Class Anthozoa													
Actiniaria unid. spp	0	0	0	0	0	0	0	0	0	0	0	0	0
Diadumene sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Flosmaris grandis Hand & Bushnell 1967	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM PLATYHELMINTHES													
Class Turbellaria													
Girardia tigrine (Girard, 1850)	0	0	0	0	0	0	0	0	0	0	0	0	0
Turbellaria unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM NEMATODA													
Nematoda unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM ANNELIDA													
Class Oligochaeta													
Naididae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Oligochaeta unid. spp.	51	4	324	28	191	3	27	167	24	86	113	98	4
Tubificidae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Order Hirudinida													
Gloiobdella elongata (Castle 1900)	0	0	0	0	0	0	0	0	0	0	0	0	0
Helobdella stagnalis (Linneaus 1758)	0	0	0	0	0	0	0	0	0	0	0	0	0
Helobdella triserialis (E. Blanchard 1849)	0	0	0	0	0	0	0	0	0	0	0	0	0
Mooreobdella microstoma (Moore 1901)	0	0	0	0	0	0	0	0	0	0	0	0	0
Placobdella montifera (Moore 1906)	0	0	0	0	0	0	0	0	0	0	0	0	0
Class Polychaeta													
Alitta brandti Malmgren 1865	0	0	0	0	0	0	0	0	0	0	0	0	0
Alitta succinea (Leuckart 1847)	0	0	0	0	0	0	0	0	0	0	0	0	0
Amaeana sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4. Species list and abundance at sampling station SB04, Coyote Creek, California, May 2016–March 2018.—Continued

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Class Polychaeta—Continued													
Acmira catherinae (Laubier 1967)	0	0	0	0	0	0	0	0	0	0	0	0	0
Acmira lopezi (Berkeley & and Berkeley 1956)	0	0	0	0	0	0	0	0	0	0	0	0	0
Armandia brevis (Moore 1906)	0	0	0	0	0	0	0	0	0	0	0	0	0
Boccardiella ligerica (Ferronnière, 1898)	0	0	3	7	46	1	0	235	65	0	0	6	48
Capitella capitata (Frabricius 1780) complex	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirratulidae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirriformia moorei Blacke 1996	0	0	0	0	0	0	0	0	0	0	0	0	0
Cossura sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipolydora brachycephala Hartman 1936	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipolydora caulleryi (Mesnil 1897)	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipolydora socialis (Schmarda 1861)	9	1	0	1	0	0	0	0	0	0	0	0	0
Dipolydora unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Eteone californica Hartman 1936	0	0	0	0	0	0	0	0	0	0	0	0	0
Eteone lighti Hartman 1936	2	1	4	0	2	1	0	0	1	2	2	15	0
Euchone limnicola Reish 1959	0	0	0	0	0	0	0	0	0	0	0	0	0
Exogone lourei Berkeley & Berkeley 1938	1	0	0	0	0	0	0	0	0	0	0	0	0
Glycera americana Leidy 1855	0	0	0	0	0	0	0	0	0	0	0	0	0
Glycinde armigera Moore 1911	0	0	0	0	0	0	0	0	0	0	0	0	0
Glycinde picta Berkele 1927	0	0	0	0	0	0	0	0	0	0	0	0	0
Glycinde sp. SF1	0	0	0	0	0	0	0	0	0	0	0	0	0
Harmothoe imbricata (Linneaus 1767)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hediste limnicola (Johnson 1903)	3	0	0	0	0	0	0	0	0	0	0	2	1
Heteromastus filiformis (Claparède 1864)	2	0	3	0	0	0	0	0	0	0	0	0	0

Table 4. Species list and abundance at sampling station SB04, Coyote Creek, California, May 2016–March 2018.—Continued

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Class Polychaeta—Conitnued													
Laonome calida Capa 2007	0	0	0	0	0	0	0	1	1	0	0	0	0
Leitoscoloplos pugettensis (Pettibone 1957)	0	0	0	0	0	0	0	0	0	0	0	0	0
Lumbrineris inflata Moore 1911	0	0	0	0	0	0	0	0	0	0	0	0	0
Manayunkia speciosa Leidy 1859	0	0	0	0	0	0	0	0	0	0	0	0	0
Marenzelleria neglecta Sikoski & Bick 2004	0	0	0	0	0	0	0	3	0	0	0	0	0
Marphysa sanguinea (Montagu 1813)	0	0	0	0	0	0	0	0	0	0	0	0	0
Megasyllis nipponica (Imajima 1966)	0	0	0	0	0	0	0	0	0	0	0	0	0
Neoamphitrite sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Nephtys caecoides Hartman 1938	0	0	0	0	0	0	0	0	0	0	0	0	0
Nephtys cornuta (Berkeley & Berkeley 1945)	0	0	0	0	0	0	0	0	0	0	0	0	0
Nereis pelagica neonigripes Hartman 1936	0	0	0	0	0	0	0	0	0	0	0	0	0
Paleanotus bellis (Johnson 18970	0	0	0	0	0	0	0	0	0	0	0	0	0
Pectinaria californiensis Hartman 1941	0	0	0	0	0	0	0	0	0	0	0	0	0
Pholoides aspera (Johnson 1897)	0	0	0	0	0	0	0	0	0	0	0	0	0
Phyllodoce groenlandica Örsted 1842	0	0	0	0	0	0	0	0	0	0	0	0	0
Pista pacifica Berkeley & Berkeley 1942	0	0	0	0	0	0	0	0	0	0	0	0	0
Platynereis bicanaliculata (Baird 1863)	0	0	0	0	0	0	0	0	0	0	0	0	0
Polycirrus unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Polydora cornuta Bosc 1802	6	2	2	9	14	0	0	0	0	1	2	5	0
Pseudopolydora kempi Southern 1921	2	0	4	0	1	0	0	0	0	0	0	0	0

Table 4. Species list and abundance at sampling station SB04, Coyote Creek, California, May 2016–March 2018.—Continued

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Class Polychaeta—Continued													
Pseudopolydora paucibranchiata (Okuda 1937)	0	0	0	0	0	0	0	0	0	0	0	0	0
Sabaco elongatus (Verrill 1873)	0	0	0	0	0	0	0	0	0	0	0	0	0
Schistomeringos annulate (Moore 1906)	0	0	0	0	0	0	0	0	0	0	0	0	0
Schistomeringos longicornis (Ehlers 1901)	0	0	0	0	0	0	0	0	0	0	0	0	0
Scolelepis squamata (O.F. Muller 1806)	0	0	0	0	0	0	0	0	0	0	0	0	0
Scoletoma luti (Berkeley & Berkeley 1945)	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerosyllis californiensis Hartman 1966	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerosyllis sp. *A*	0	0	0	0	0	0	0	0	0	0	0	0	0
Spiophanes duplex (Chamberlin 1919)	0	0	0	0	0	0	0	0	0	0	0	0	0
Streblospio benedicti Webster 1879	247	16	169	27	276	32	0	0	0	100	65	436	4
Tharyx parvus Barkeley 1929	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM ARTHROPODA													
Class Crustacea													
SubClass Copepoda													
Cyclopid sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
SubClass Ostracoda													
Cyclocypris sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Cypricercus sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Cyprideis sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Candona sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Eucypris sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Eusarsiella zostericola (Cushman 1906)	0	0	1	0	2	2	0	0	0	0	0	0	0

Table 4. Species list and abundance at sampling station SB04, Coyote Creek, California, May 2016–March 2018.—Continued

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SubClass Ostracoda—Continued													
Herpetocypris brevicaudata Kaufmann 1900	0	0	0	0	0	0	0	0	0	0	0	0	0
Isocypris sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
SubClass Cirripedia													
Balanus improvisus Darwin 1854	0	0	0	0	0	0	0	0	0	0	0	0	0
SubClass Malacostraca													
Order Mysidacea													
Acanthomysis aspera Li 1964	0	0	0	0	0	0	0	0	0	0	0	0	0
Alienacanthomysis macropsis (W. Tattersall 1932)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hyperacanthomysis longirostris (Li 1936)	0	0	0	0	0	0	0	1	0	0	0	0	0
Neomysis japonica Nakazawa 1910	0	0	0	0	0	0	0	0	0	0	0	0	0
Neomysis kadiakensis Ortmann 1908	0	0	0	0	0	0	0	1	0	0	0	0	0
Neomysis mercedis Holmes 1896	0	0	0	0	0	0	0	0	0	0	0	0	0
Order Cumacea													
Cumella vulgaris Hart 1930	0	0	0	0	0	0	0	0	0	0	0	0	0
Eudorella pacifica Hart 1930	0	0	0	0	0	0	0	0	0	0	0	0	0
Nippoleucon hinumensis (Gamo 1967)	0	0	0	0	5	5	0	48	5	0	223	82	3
Order Tanaidacea													
Sinelobus spp.	0	0	0	0	0	0	0	1	0	0	0	10	0
Order Isopoda													
Gnorimosphaeroma insulare (Van Name 1940)	0	0	0	0	0	0	0	0	0	0	0	0	0
Gnorimosphaeroma oregonensis Dana 1853	6	0	1	3	0	0	0	4	1	0	0	0	0
Paranthura japonica Richardson 1909	0	0	0	0	0	0	0	0	0	0	0	0	0
Synidotea laevidorsalis (Miers 1881)	3	0	6	0	6	0	0	251	0	0	0	0	0

Table 4. Species list and abundance at sampling station SB04, Coyote Creek, California, May 2016–March 2018.—Continued

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Order Amphipoda													
Americhelidium shoemakeri (Mills 1962)	0	0	0	0	0	0	0	0	0	0	0	0	0
Americorophium spinicorne (Stimpson 1857)	1,455	0	0	0	0	3	338	577	0	0	0	0	0
Americorophium stimpsoni (Shoemaker 1941)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampelisca abdita (Mills 1964)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampelisca lobate Holmes 1908	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampithoe plumulosa Shoemaker 1938	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampithoe valida Smith 1873	0	0	0	0	0	0	0	0	0	0	0	0	0
Caprella mendax Mayer 1903	0	0	0	0	0	0	0	0	0	0	0	0	0
Caprella scaura Templeton 1836	0	0	0	0	0	0	0	0	0	0	0	0	0
Crangonyx floridanus Bousfield 1963	0	0	0	0	0	0	0	0	0	0	0	0	0
Eogammarus confervicolus (Stimpson 1856)	0	0	0	0	0	0	0	0	0	0	0	0	0
Eusiroidae unid. Spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Gammarus daiberi (Bousfield 1969)	0	0	0	0	0	0	4	157	0	0	0	0	0
Gnathopleustes pugettensis (Dana 1853)	0	0	0	0	0	0	0	0	0	0	0	0	0
Grandidierella japonica Stephensen 1938	122	3	7	16	269	56	28	13	1	0	1	18	204
Grandifoxus grandis (Stimpson 1856)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hyalella sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Melita nitida Smith 1873	0	0	0	0	0	0	0	0	0	0	0	0	0
Monocorophium acherusicum Costa 1853	0	0	0	0	0	0	0	0	0	0	0	0	0
Monocorophium insidiosum (Crawford 1937)	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4. Species list and abundance at sampling station SB04, Coyote Creek, California, May 2016–March 2018.—Continued

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Order Amphipoda—Continued													
Monocorophium uenoi (Stephensen 1932)	0	0	0	0	0	0	0	0	0	0	0	0	0
Paradexamine sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Photis brevipes Shoemaker 1942	0	0	0	0	0	0	0	0	0	0	0	0	0
Sinocorophium alienense (Chapman 1988)	0	0	0	224	1,316	558	11	4	0	0	12	6	81
Sinocorophium heteroceratum (Yu 1938)	0	0	0	0	0	0	0	0	0	0	0	0	0
Stenothoe valida Dana 1852	0	0	0	0	0	0	0	0	0	0	0	0	0
Talitridae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Order Decapoda													
Crangon franciscorum Stimpson 1856	0	0	0	0	0	0	0	0	0	0	0	0	0
Decopoda unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Palaemon modestus (Heller 1862)	0	0	0	0	0	0	0	0	0	0	0	0	0
Palaemon macrodactylus Rathbun 1902	0	0	0	0	0	0	0	0	0	0	0	0	0
Class Insecta													
Family Chironomidae													
Chironomidae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM MOLLUSCA													
Class Gastropoda													
Melanochlamys diomedea (Bergh 1894)	0	0	0	0	0	0	0	0	0	0	0	0	0
Nudibranchia unid. spp.	0	0	0	0	0	0	0	0	0	0	0	1	0
Okenia plana Baba 1960	0	0	0	0	0	0	0	0	0	0	0	0	0
Onchidoris bilamellata (Linnaeus 1767)	0	0	0	0	0	0	0	0	0	0	0	0	0
Philine auriformis Suter 1909	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4. Species list and abundance at sampling station SB04, Coyote Creek, California, May 2016–March 2018.—Continued

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SubClass Pulmonata													
Ferrissia californica (Rowell 1863)	0	0	0	0	0	0	0	0	0	0	0	0	0
Gyraulus circumstriatus (Tryon 1866)	0	0	0	0	0	0	0	0	0	0	0	0	0
Helisoma anceps (Menke 1830)	0	0	0	0	0	0	0	0	0	0	0	0	0
Lymnaea humilis (Say *1825)*	0	0	0	0	0	0	0	0	0	0	0	0	0
Lymnaea columella (Say 1817)	0	0	0	0	0	0	0	0	0	0	0	0	0
Menetus dilatatus (Gould 1841)	0	0	0	0	0	0	0	0	0	0	0	0	0
Physa sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Radix auricularia (Linnaeus 1758)	0	0	0	0	0	0	0	0	0	0	0	0	0
SuperFamily Hydrobioidea													
Assiminea californica (Tryon 1865)	0	0	0	0	0	0	0	0	0	0	0	0	0
Boonea bisuturalis (Say 1822)	0	0	0	0	0	0	0	0	0	0	0	0	0
Crepidula plana Say 1822	0	0	0	0	0	0	0	0	0	0	0	0	0
Epitonium sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Fluminicola sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Nassarius obsoletus (Say 1822)	0	0	0	0	0	0	0	0	0	0	0	0	0
Odostomia fetella Dall & Bartsch 1909	0	0	0	0	0	0	0	0	0	0	0	0	0
Class Bivalvia													
Arcuatula senhousia (Benson 1842)	1	1	9	0	0	0	0	0	0	0	0	0	0
Corbicula fluminea (O. F. Müller 1774)	0	0	0	0	0	0	0	0	0	0	0	0	0
Gemma gemma (Totten 1834)	25	0	24	0	2	0	0	0	0	0	0	0	0
Macoma petalum (Valenciennes 1821)	1	0	8	5	18	8	13	5	5	3	1	0	0
Musculium transversum (Say 1829)	0	0	0	0	0	0	0	0	0	0	0	0	0
Mya arenaria Linnaeus 1758	0	0	0	0	0	0	0	0	0	0	0	0	0
Pisidium casertanum (Poli 1791)	0	0	0	0	0	0	0	0	0	0	0	0	0
Pisidium compressum Prime 1852	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4. Species list and abundance at sampling station SB04, Coyote Creek, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

TAXON	Sampling date												
	05-25-16	07-11-16	08-19-16	09-22-16	11-18-16	01-05-17	03-20-17	05-11-17	17-17-17	09-28-17	11-09-17	01-09-18	03-08-18
Class Bivalvia—Continued													
Potamocorbula amurensis (Shrenck 1861)	130	44	332	143	54	11	15	28	24	1	0	1	8
Theora lubrica Gould 1861	0	0	0	0	0	0	0	0	0	0	0	0	0
Venerupis philippinarum (A. Adams & Reeve 1850)	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM CHORDATA													
Class Ascidacea													
Molgula manhattensis (De Kay 1843)	0	0	0	0	0	0	0	0	0	0	0	0	0
Styela clava (Herdman 1881)	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM ECHINODERMATA													
Class Ophiuroidea													
Amphiuridae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 5. Species list and abundance at sampling station SB13, Artesian Slough, California, May 2016–March 2018.

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date												
	05-25-16	07-11-16	08-19-16	09-22-16	11-18-16	01-05-17	03-20-17	05-11-17	17-17-17	09-28-17	11-09-17	01-09-18	03-08-18
PHYLUM CNIDARIA													
Class Anthozoa													
Actiniaria unid. spp	0	0	0	0	0	0	0	0	0	0	0	0	0
Diadumene sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Flosmaris grandis Hand & Bushnell 1967	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM PLATYHELMINTHES													
Class Turbellaria													
Girardia tigrine (Girard, 1850)	0	0	0	0	0	0	0	0	0	0	0	0	0
Turbellaria unid. spp.	0	0	0	0	0	0	0	27	0	0	0	0	3
PHYLUM NEMATODA													
Nematoda unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM ANNELIDA													
Class Oligochaeta													
Naididae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Oligochaeta unid. spp.	119	539	437	2,640	1,906	4	1,388	474	197	54	218	493	82
Tubificidae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Order Hirudinida													
Gloiobdella elongata (Castle 1900)	0	0	0	0	0	0	0	0	0	0	0	0	0
Helobdella stagnalis (Linneaus 1758)	0	0	0	0	0	0	0	0	0	0	0	0	0
Helobdella triserialis (E. Blanchard 1849)	0	0	0	0	0	0	0	0	0	0	0	0	0
Mooreobdella microstoma (Moore 1901)	0	0	0	0	0	0	0	0	0	0	0	0	0
Placobdella montifera (Moore 1906)	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 5. Species list and abundance at sampling station SB13, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

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	05-25-16	07-11-16	08-19-16	09-22-16	11-18-16	01-05-17	03-20-17	05-11-17	17-17-17	09-28-17	11-09-17	01-09-18	03-08-18
Class Polychaeta													
Alitta brandti Malmgren 1865	0	0	0	0	0	0	0	0	0	0	0	0	0
Alitta succinea (Leuckart 1847)	0	2	0	0	0	0	0	0	0	0	0	0	0
Amaeana sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Acmira catherinae (Laubier 1967)	0	0	0	0	0	0	0	0	0	0	0	0	0
Acmira lopezi (Berkeley & and Berkeley 1956)	0	0	0	0	0	0	0	0	0	0	0	0	0
Armandia brevis (Moore 1906)	0	0	0	0	0	0	0	0	0	0	0	0	0
Boccardiella ligerica (Ferronnière, 1898)	130	182	265	176	0	246	32	187	885	298	0	3	598
Capitella capitata (Frabricius 1780) complex	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirratulidae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirriformia moorei Blacke 1996	0	0	0	0	0	0	0	0	0	0	0	0	0
Cossura sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipolydora brachycephala Hartman 1936	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipolydora caulleryi (Mesnil 1897)	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipolydora socialis (Schmarda 1861)	1	0	2	2	0	5	0	0	0	0	0	0	0
Dipolydora unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Eteone californica Hartman 1936	0	0	0	0	0	0	0	0	0	0	0	0	0
Eteone lighti Hartman 1936	2	2	4	6	1	1	0	0	0	1	4	2	0
Euchone limnicola Reish 1959	0	0	0	0	0	0	0	0	0	0	0	0	0
Exogone lourei Berkeley & Berkeley 1938	0	0	0	0	0	0	0	0	0	0	0	0	0
Glycera americana Leidy 1855	0	0	0	0	0	0	0	0	0	0	0	0	0
Glycinde armigera Moore 1911	0	0	0	0	0	0	0	0	0	0	0	0	0
Glycinde picta Berkele 1927	0	0	0	0	0	0	0	0	0	0	0	0	0
Glycinde sp. SF1	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 5. Species list and abundance at sampling station SB13, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

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Class Polychaeta—Continued													
Harmothoe imbricata (Linneaus 1767)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hediste limnicola (Johnson 1903)	0	1	1	3	0	0	7	10	5	0	0	3	3
Heteromastus filiformis (Claparède 1864)	1	0	1	3	0	0	0	0	0	0	0	0	0
Laonome calida Capa 2007	0	0	1	0	2	0	0	0	6	0	0	1	0
Leitoscoloplos pugettensis (Petti-bone 1957)	0	0	0	0	0	0	0	0	0	0	0	0	0
Lumbrineris inflata Moore 1911	0	0	0	0	0	0	0	0	0	0	0	0	0
Manayunkia speciosa Leidy 1859	0	0	0	0	0	0	0	0	0	0	0	0	0
Marenzelleria neglecta Sikoski & Bick 2004	0	0	0	0	0	0	0	0	3	0	0	0	0
Marphysa sanguinea (Montagu 1813)	0	0	0	0	0	0	0	0	0	0	0	0	0
Megasyllis nipponica (Imajima 1966)	0	0	0	0	0	0	0	0	0	0	0	0	0
Neoamphitrite sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Nephtys caecoides Hartman 1938	0	0	0	0	0	0	0	0	0	0	0	0	0
Nephtys cornuta (Berkeley & Berke-ley 1945)	0	0	0	0	0	0	0	0	0	0	0	0	0
Nereis pelagica neonigripes Hart-man 1936	0	0	0	0	0	0	0	0	0	0	0	0	0
Paleanotus bellis (Johnson 18970	0	0	0	0	0	0	0	0	0	0	0	0	0
Pectinaria californiensis Hartman 1941	0	0	0	0	0	0	0	0	0	0	0	0	0
Pholoides aspera (Johnson 1897)	0	0	0	0	0	0	0	0	0	0	0	0	0
Phyllodoce groenlandica Örsted 1842	0	0	0	0	0	0	0	0	0	0	0	0	0
Pista pacifica Berkeley & Berkeley 1942	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 5. Species list and abundance at sampling station SB13, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

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Class Polychaeta—Continued													
Platynereis bicanaliculata (Baird 1863)	0	0	0	0	0	0	0	0	0	0	0	0	0
Polycirrus unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Polydora cornuta Bosc 1802	0	4	0	5	0	64	0	0	0	0	0	0	0
Pseudopolydora kempi Southern 1921	2	9	2	10	0	5	0	0	0	0	0	0	0
Pseudopolydora paucibranchiata (Okuda 1937)	0	0	0	0	0	0	0	0	0	0	0	0	0
Sabaco elongatus (Verrill 1873)	0	0	0	0	0	0	0	0	0	0	0	0	0
Schistomeringos annulate (Moore 1906)	0	0	0	0	0	0	0	0	0	0	0	0	0
Schistomeringos longicornis (Ehlers 1901)	0	0	0	0	0	0	0	0	0	0	0	0	0
Scolelepis squamata (O.F. Muller 1806)	0	0	0	0	0	0	0	0	0	0	0	0	0
Scoletoma luti (Berkeley & Berkeley 1945)	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerosyllis californiensis Hartman 1966	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerosyllis sp. *A*	0	0	0	0	0	0	0	0	0	0	0	0	0
Spiophanes duplex (Chamberlin 1919)	0	0	0	0	0	0	0	0	0	0	0	0	0
Streblospio benedicti Webster 1879	375	845	445	1,555	733	33	1	0	0	0	45	130	2
Tharyx parvus Barkeley 1929	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM ARTHROPODA													
Class Crustacea													
SubClass Copepoda													
Cyclopid sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
SubClass Ostracoda													
Candona sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 5. Species list and abundance at sampling station SB13, Artesian Slough, California, May 2016–March 2018.—Continued

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SubClass Ostracoda—Continued													
Cyclocypris sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Cypricercus sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Cyprideis sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Eucypris sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Eusarsiella zostericola (Cushman 1906)	0	0	0	0	0	0	0	0	0	0	0	0	0
Herpetocypris brevicaudata Kaufmann 1900	0	0	0	0	0	0	0	0	0	0	0	0	0
Isocypris sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
SubClass Cirripedia													
Balanus improvisus Darwin 1854	0	0	0	0	0	0	0	0	0	0	0	0	0
SubClass Malacostraca													
Order Mysidacea													
Acanthomysis aspera Li 1964	0	0	0	0	0	0	0	0	0	0	0	0	0
Alienacanthomysis macropsis (W. Tattersall 1932)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hyperacanthomysis longirostris (Li 1936)	0	0	0	0	0	0	0	0	0	0	0	0	0
Neomysis japonica Nakazawa 1910	0	0	0	0	0	0	0	0	0	0	0	0	0
Neomysis kadiakensis Ortmann 1908	0	0	0	0	0	0	0	0	0	0	0	0	0
Neomysis mercedis Holmes 1896	0	0	0	0	0	0	0	0	0	0	0	0	0
Order Cumacea													
Cumella vulgaris Hart 1930	0	0	0	0	0	0	0	0	0	0	0	0	0
Eudorella pacifica Hart 1930	0	0	0	0	0	0	0	0	0	0	0	0	0
Nippoleucon hinumensis (Gamo 1967)	0	0	1	2	0	0	2	0	3	0	177	186	3
Order Tanaidacea													
Sinelobus spp.	0	1	0	0	0	1	0	1	0	18	0	0	133

Table 5. Species list and abundance at sampling station SB13, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

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	05-25-16	07-11-16	08-19-16	09-22-16	11-18-16	01-05-17	03-20-17	05-11-17	17-17-17	09-28-17	11-09-17	01-09-18	03-08-18
Order Isopoda													
Gnorimosphaeroma insulare (Van Name 1940)	0	0	0	0	0	0	0	0	0	0	0	0	0
Gnorimosphaeroma oregonensis Dana 1853	13	98	0	0	5	0	0	8	0	0	0	0	2
Paranthura japonica Richardson 1909	0	0	0	0	0	0	0	0	0	0	0	0	0
Synidotea laevidorsalis (Miers 1881)	10	114	0	0	71	2	0	4	30	0	0	0	1
Order Amphipoda													
Americhelidium shoemakeri (Mills 1962)	0	0	0	0	0	0	0	0	0	0	0	0	0
Americorophium spinicorne (Stimpson 1857)	2,349	4,391	30	7	3,031	7,389	564	2,967	156	0	0	0	74
Americorophium stimpsoni (Shoemaker 1941)	0	0	0	0	0	0	0	0	0	0	0	0	1
Ampelisca abdita (Mills 1964)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampelisca lobate Holmes 1908	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampithoe plumulosa Shoemaker 1938	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampithoe valida Smith 1873	32	331	0	0	0	5	0	0	0	0	0	0	0
Caprella mendax Mayer 1903	0	0	0	0	0	0	0	0	0	0	0	0	0
Caprella scaura Templeton 1836	0	0	0	0	0	0	0	0	0	0	0	0	0
Crangonyx floridanus Bousfield 1963	0	0	0	0	0	0	0	0	0	0	0	0	0
Eogammarus confervicolus (Stimpson 1856)	0	0	0	0	0	0	0	0	0	0	0	0	0
Eusiroidae unid. Spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Gammarus daiberi (Bousfield 1969)	0	0	0	0	0	0	0	399	0	0	0	0	0
Gnathopleustes pugettensis (Dana 1853)	0	0	0	0	0	0	0	0	0	0	0	0	0
Grandidierella japonica Stephensen 1938	104	136	4	318	1,303	681	3	3	1	58	80	12	291

Table 5. Species list and abundance at sampling station SB13, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

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Order Amphipoda—Continued													
Grandifoxus grandis (Stimpson 1856)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hyalella sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Melita nitida Smith 1873	0	0	0	0	0	0	0	2	0	0	0	0	0
Monocorophium acherusicum Costa 1853	0	0	1	1	0	0	0	0	0	0	0	0	2
Monocorophium insidiosum (Crawford 1937)	0	0	0	0	0	0	0	0	0	0	0	0	1
Monocorophium uenoi (Stephensen 1932)	0	0	0	0	0	0	0	0	0	0	0	0	0
Paradexamine sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Photis brevipes Shoemaker 1942	0	0	0	0	0	0	0	0	0	0	0	0	0
Sinocorophium alienense (Chapman 1988)	0	0	0	11	0	0	0	0	0	38	0	2	83
Sinocorophium heteroceratum (Yu 1938)	0	0	0	0	0	0	0	0	0	0	0	0	0
Stenothoe valida Dana 1852	0	0	0	0	0	0	0	0	0	0	0	0	0
Talitridae unid. spp.	0	0	0	0	0	0	1	0	0	0	0	0	0
Order Decapoda													
Crangon franciscorum Stimpson 1856	0	0	0	0	0	0	0	0	0	0	0	0	0
Decopoda unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Palaemon modestus (Heller 1862)	0	0	0	0	0	0	0	0	0	0	0	0	0
Palaemon macrodactylus Rathbun 1902	0	0	0	0	0	0	0	0	0	0	0	0	0
Class Insecta													
Family Chironomidae													
Chironomidae unid. spp.	0	0	0	0	0	0	5	74	0	0	0	0	0

Table 5. Species list and abundance at sampling station SB13, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

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PHYLUM MOLLUSCA													
Class Gastropoda													
Okenia plana Baba 1960	0	0	0	0	0	0	0	0	0	0	0	0	0
Onchidoris bilamellata (Linnaeus 1767)	0	0	0	0	0	0	0	0	0	0	0	0	0
Melanochlamys diomedea (Bergh 1894)	0	0	0	0	0	0	0	0	0	0	0	0	0
Nudibranchia unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Philine auriformis Suter 1909	0	0	0	0	0	0	0	0	0	0	0	0	0
SubClass Pulmonata													
Ferrissia californica (Rowell 1863)	0	0	0	0	0	0	0	0	0	0	0	0	0
Gyraulus circumstriatus (Tryon 1866)	0	0	0	0	0	0	0	0	0	0	0	0	0
Helisoma anceps (Menke 1830)	0	0	0	0	0	0	0	0	0	0	0	0	0
Lymnaea humilis (Say *1825)*	0	0	0	0	0	0	0	0	0	0	0	0	0
Lymnaea columella (Say 1817)	0	0	0	0	0	0	0	0	0	0	0	0	0
Menetus dilatatus (Gould 1841)	0	0	0	0	0	0	0	0	0	0	0	0	0
Physa sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Radix auricularia (Linnaeus 1758)	0	0	0	0	0	0	0	0	0	0	0	0	0
SuperFamily Hydrobioidea													
Assiminea californica (Tryon 1865)	0	0	0	0	0	0	0	0	0	0	0	0	0
Boonea bisuturalis (Say 1822)	0	0	0	0	0	0	0	0	0	0	0	0	0
Crepidula plana Say 1822	0	0	0	0	0	0	0	0	0	0	0	0	0
Epitonium sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Fluminicola sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Nassarius obsoletus (Say 1822)	0	0	0	0	0	0	0	0	0	0	0	0	0
Odostomia fetella Dall & Bartsch 1909	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 5. Species list and abundance at sampling station SB13, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date												
	05-25-16	07-11-16	08-19-16	09-22-16	11-18-16	01-05-17	03-20-17	05-11-17	17-17-17	09-28-17	11-09-17	01-09-18	03-08-18
Class Bivalvia													
Arcuatula senhousia (Benson 1842)	0	0	0	0	0	0	0	0	0	0	0	0	0
Corbicula fluminea (O. F. Müller 1774)	0	0	0	0	0	0	0	0	0	0	0	0	0
Gemma gemma (Totten 1834)	0	0	0	0	0	0	0	0	0	0	0	0	0
Macoma petalum (Valenciennes 1821)	5	4	4	45	3	0	6	0	2	0	2	0	0
Musculium transversum (Say 1829)	0	0	0	0	0	0	0	0	0	0	0	0	0
Mya arenaria Linnaeus 1758	0	0	0	0	0	0	0	0	0	0	0	0	0
Pisidium casertanum (Poli 1791)	0	0	0	0	0	0	0	0	0	0	0	0	0
Pisidium compressum Prime 1852	0	0	0	0	0	0	0	0	0	0	0	0	0
Potamocorbula amurensis (Shrenck 1861)	13	24	8	89	23	14	1	6	8	0	0	32	9
Theora lubrica Gould 1861	0	0	0	0	0	0	0	0	0	0	0	0	0
Venerupis philippinarum (A. Adams & Reeve 1850)	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM CHORDATA													
Class Ascidacea													
Molgula manhattensis (De Kay 1843)	0	0	0	0	0	0	0	0	0	0	0	0	0
Styela clava (Herdman 1881)	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM ECHINODERMATA													
Class Ophiuroidea													
Amphiuridae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 6. Species list and abundance at sampling station Upcoy, Artesian Slough, California, May 2016–March 2018.

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

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	05-25-16	07-11-16	08-19-16	09-22-16	11-18-16	01-05-17	03-20-17	05-11-17	17-17-17	09-28-17	11-09-17	01-09-18	03-08-18
PHYLUM CNIDARIA													
Class Anthozoa													
Actiniaria unid. spp	6	2	0	0	1	0	0	0	0	0	0	0	0
Diadumene sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Flosmaris grandis Hand & Bushnell 1967	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM PLATYHELMINTHES													
Class Turbellaria													
Girardia tigrine (Girard, 1850)	0	0	0	0	0	0	0	0	0	0	0	0	0
Turbellaria unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM NEMATODA													
Nematoda unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM ANNELIDA													
Class Oligochaeta													
Naididae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Oligochaeta unid. spp.	159	394	555	491	733	195	42	591	535	267	194	319	361
Tubificidae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Order Hirudinida													
Gloiobdella elongata (Castle 1900)	0	0	0	0	0	0	0	0	0	0	0	0	0
Helobdella stagnalis (Linneaus 1758)	0	0	0	0	0	0	0	0	0	0	0	0	0
Helobdella triserialis (E. Blanchard 1849)	0	0	0	0	0	0	0	0	0	0	0	0	0
Mooreobdella microstoma (Moore 1901)	0	0	0	0	0	0	0	0	0	0	0	0	0
Placobdella montifera (Moore 1906)	0	0	0	0	0	0	0	0	0	0	0	0	0
Class Polychaeta													
Alitta brandti Malmgren 1865	0	0	0	0	0	0	0	0	0	0	0	0	0
Alitta succinea (Leuckart 1847)	0	0	0	0	0	0	0	0	0	0	0	0	0
Amaeana sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 6. Species list and abundance at sampling station Upcoy, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

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Class Polychaeta—Continued													
Acmira catherinae (Laubier 1967)	0	0	0	0	0	0	0	0	0	0	0	0	0
Acmira lopezi (Berkeley & and Berkeley 1956)	0	0	0	0	0	0	0	0	0	0	0	0	0
Armandia brevis (Moore 1906)	0	0	0	0	0	0	0	0	0	0	0	0	0
Boccardiella ligerica (Ferronnière, 1898)	20	16	12	66	31	7	8	35	76	33	0	25	6
Capitella capitata (Frabricius 1780) complex	0	0	0	0	2	0	0	0	0	0	0	0	0
Cirratulidae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Cirriformia moorei Blacke 1996	0	0	0	0	0	0	0	0	0	0	0	0	0
Cossura sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipolydora brachycephala Hartman 1936	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipolydora caulleryi (Mesnil 1897)	0	0	0	0	0	0	0	0	0	0	0	0	0
Dipolydora socialis (Schmarda 1861)	1	3	1	0	3	0	0	0	0	0	0	0	0
Dipolydora unid. spp.	1	0	0	0	0	0	0	0	0	0	0	0	0
Eteone californica Hartman 1936	0	0	0	0	0	0	0	0	0	0	0	0	0
Eteone lighti Hartman 1936	3	9	9	11	2	1	0	0	0	3	6	0	0
Euchone limnicola Reish 1959	0	0	0	0	0	0	0	0	0	0	0	0	0
Exogone lourei Berkeley & Berkeley 1938	0	0	0	0	0	0	0	0	0	0	0	0	0
Glycera americana Leidy 1855	0	0	0	0	0	0	0	0	0	0	0	0	0
Glycinde armigera Moore 1911	0	0	0	0	0	0	0	0	0	0	0	0	0
Glycinde picta Berkele 1927	0	0	0	0	0	0	0	0	0	0	0	0	0
Glycinde sp. SF1	0	0	0	0	0	0	0	0	0	0	0	0	0
Harmothoe imbricata (Linneaus 1767)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hediste limnicola (Johnson 1903)	0	0	0	0	0	0	0	3	0	0	0	7	0
Heteromastus filiformis (Claparède 1864)	1	2	1	0	1	0	0	0	0	0	0	0	0

Table 6. Species list and abundance at sampling station Upcoy, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

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Class Polychaeta—Continued													
Laonome calida Capa 2007	1	0	0	0	1	0	0	0	2	0	0	0	0
Leitoscoloplos pugettensis (Pettibone 1957)	0	0	0	0	0	0	0	0	0	0	0	0	0
Lumbrineris inflata Moore 1911	0	0	0	0	0	0	0	0	0	0	0	0	0
Manayunkia speciosa Leidy 1859	0	0	0	0	0	0	0	0	0	0	0	0	0
Marenzelleria neglecta Sikoski & Bick 2004	0	0	0	0	0	0	0	16	6	7	0	0	1
Marphysa sanguinea (Montagu 1813)	0	0	0	0	0	0	0	0	0	0	0	0	0
Megasyllis nipponica (Imajima 1966)	0	0	0	0	0	0	0	0	0	0	0	0	0
Neoamphitrite sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Nephtys caecoides Hartman 1938	0	0	0	0	0	0	0	0	0	0	0	0	0
Nephtys cornuta (Berkeley & Berkeley 1945)	0	0	0	0	0	0	0	0	0	0	0	0	0
Nereis pelagica neonigripes Hartman 1936	0	0	0	0	0	0	0	0	0	0	0	0	0
Paleanotus bellis (Johnson 18970	0	0	0	0	0	0	0	0	0	0	0	0	0
Pectinaria californiensis Hartman 1941	0	0	0	0	0	0	0	0	0	0	0	0	0
Pholoides aspera (Johnson 1897)	0	0	0	0	0	0	0	0	0	0	0	0	0
Phyllodoce groenlandica Örsted 1842	0	0	0	0	0	0	0	0	0	0	0	0	0
Pista pacifica Berkeley & Berkeley 1942	0	0	0	0	0	0	0	0	0	0	0	0	0
Platynereis bicanaliculata (Baird 1863)	0	0	0	0	0	0	0	0	0	0	0	0	0
Polycirrus unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Polydora cornuta Bosc 1802	0	25	6	5	8	0	0	0	0	0	4	5	0
Pseudopolydora kempi Southern 1921	2	1	3	1	1	0	0	0	0	0	0	0	0
Pseudopolydora paucibranchiata (Okuda 1937)	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 6. Species list and abundance at sampling station Upcoy, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

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	05-25-16	07-11-16	08-19-16	09-22-16	11-18-16	01-05-17	03-20-17	05-11-17	17-17-17	09-28-17	11-09-17	01-09-18	03-08-18
Class Polychaeta—Continued													
Sabaco elongatus (Verrill 1873)	0	0	0	0	0	0	0	0	0	0	0	0	0
Schistomeringos annulate (Moore 1906)	0	0	0	0	0	0	2	0	0	0	0	0	0
Schistomeringos longicornis (Ehlers 1901)	0	0	0	0	0	0	0	0	0	0	0	0	0
Scolelepis squamata (O.F. Muller 1806)	0	0	0	0	0	0	0	0	0	0	0	0	0
Scoletoma luti (Berkeley & Berkeley 1945)	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerosyllis californiensis Hartman 1966	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerosyllis sp. *A*	0	0	0	0	0	0	0	0	0	0	0	0	0
Spiophanes duplex (Chamberlin 1919)	0	0	0	0	0	0	0	0	0	0	0	0	0
Streblospio benedicti Webster 1879	130	521	454	624	613	354	0	0	2	24	447	280	704
Tharyx parvus Barkeley 1929	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM ARTHROPODA													
Class Crustacea													
SubClass Copepoda													
Cyclopid sp. A	0	0	0	0	0	0	0	0	1	0	0	0	0
SubClass Ostracoda													
Candona sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Cypricercus sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Cyprideis sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Cyclocypris sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Eucypris sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Eusarsiella zostericola (Cushman 1906)	0	0	0	0	0	3	0	0	0	0	0	0	0
Herpetocypris brevicaudata Kaufmann 1900	0	0	0	0	0	0	0	0	0	0	0	0	0
Isocypris sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 6. Species list and abundance at sampling station Upcoy, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

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	05-25-16	07-11-16	08-19-16	09-22-16	11-18-16	01-05-17	03-20-17	05-11-17	17-17-17	09-28-17	11-09-17	01-09-18	03-08-18
SubClass Cirripedia													
Balanus improvisus Darwin 1854	0	0	0	0	0	0	0	0	2	0	0	0	0
SubClass Malacostraca													
Order Mysidacea													
Acanthomysis aspera Li 1964	0	0	0	0	0	0	0	0	0	0	0	0	0
Alienacanthomysis macropsis (W. Tattersall 1932)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hyperacanthomysis longirostris (Li 1936)	0	0	0	0	0	0	0	0	0	0	0	1	0
Neomysis japonica Nakazawa 1910	0	0	0	0	0	0	0	0	0	0	0	0	0
Neomysis kadiakensis Ortmann 1908	0	0	0	0	0	0	0	0	0	0	0	0	0
Neomysis mercedis Holmes 1896	0	0	0	0	0	0	0	0	0	0	0	0	0
Order Cumacea													
Cumella vulgaris Hart 1930	0	0	0	0	0	0	0	0	0	0	0	0	0
Eudorella pacifica Hart 1930	0	0	0	0	0	0	0	0	0	0	0	0	0
Nippoleucon hinumensis (Gamo 1967)	4	1	2	1	0	0	0	144	77	3	159	623	382
Order Tanaidacea													
Sinelobus spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Order Isopoda													
Gnorimosphaeroma insulare (Van Name 1940)	0	0	0	0	0	0	0	0	0	0	0	0	0
Gnorimosphaeroma oregonensis Dana 1853	22	0	2	5	13	1	0	0	0	0	0	1	0
Paranthura japonica Richardson 1909	0	0	0	0	0	0	0	0	0	0	0	0	0
Synidotea laevidorsalis (Miers 1881)	10	0	2	0	0	1	0	0	3	1	0	0	0
Order Amphipoda													
Americhelidium shoemakeri (Mills 1962)	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 6. Species list and abundance at sampling station Upcoy, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

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Order Amphipoda—Continued													
Americorophium spinicorne (Stimpson 1857)	565	571	4	1	3	44	26	10	2	0	0	5	0
Americorophium stimpsoni (Shoemaker 1941)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampelisca abdita (Mills 1964)	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampelisca lobate Holmes 1908	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampithoe plumulosa Shoemaker 1938	0	0	0	0	0	0	0	0	0	0	0	0	0
Ampithoe valida Smith 1873	4	6	0	0	0	0	0	0	0	0	0	0	0
Caprella mendax Mayer 1903	0	0	0	0	0	0	0	0	0	0	0	0	0
Caprella scaura Templeton 1836	0	0	0	0	0	0	0	0	0	0	0	0	0
Sinocorophium alienense (Chapman 1988)	0	0	7	13	16	8	0	1	0	0	2	0	1
Sinocorophium heteroceratum (Yu 1938)	0	0	0	0	0	0	0	0	0	0	0	0	0
Crangonyx floridanus Bousfield 1963	0	0	0	0	0	0	0	0	0	0	0	0	0
Eogammarus confervicolus (Stimpson 1856)	0	0	0	0	0	0	0	0	0	0	0	0	0
Eusiroidae unid. Spp.	0	0	0	0	0	0	0	4	0	0	0	0	0
Gammarus daiberi (Bousfield 1969)	0	0	0	0	0	0	0	0	0	0	0	0	0
Gnathopleustes pugettensis (Dana 1853)	0	0	0	0	0	0	0	0	0	0	0	0	2
Grandidierella japonica Stephensen 1938	26	131	57	133	323	519	0	8	91	21	10	1,029	0
Grandifoxus grandis (Stimpson 1856)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hyalella sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Melita nitida Smith 1873	0	0	0	0	0	0	0	0	0	0	0	0	0
Monocorophium acherusicum Costa 1853	0	1	0	2	10	2	0	8	91	0	0	0	0

Table 6. Species list and abundance at sampling station Upcoy, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

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Order Amphipoda—Continued													
Monocorophium insidiosum (Crawford 1937)	0	0	0	0	0	0	0	0	0	0	0	0	0
Monocorophium uenoi (Stephensen 1932)	0	0	0	0	0	0	0	0	0	0	0	0	0
Paradexamine sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Photis brevipes Shoemaker 1942	0	0	0	0	0	0	0	0	0	0	0	0	0
Stenothoe valida Dana 1852	0	0	0	0	0	0	0	0	0	0	0	0	0
Talitridae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Order Decapoda													
Crangon franciscorum Stimpson 1856	0	0	0	0	0	0	0	0	0	0	0	0	0
Palaemon modestus (Heller 1862)	0	0	0	0	0	0	0	0	0	0	0	0	0
Palaemon macrodactylus Rathbun 1902	0	0	0	0	0	0	0	0	0	0	0	0	0
Decopoda unid. spp.	0	1	0	0	0	0	0	0	0	0	0	0	0
Class Insecta													
Family Chironomidae													
Chironomidae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM MOLLUSCA													
Class Gastropoda													
Okenia plana Baba 1960	0	0	0	0	0	0	0	0	0	0	0	0	0
Onchidoris bilamellata (Linnaeus 1767)	0	0	0	0	0	0	0	0	0	0	0	0	0
Melanochlamys diomedea (Bergh 1894)	0	0	0	0	0	0	0	0	0	0	0	0	0
Nudibranchia unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0
Philine auriformis Suter 1909	0	0	0	0	0	0	0	0	0	0	0	0	0
SubClass Pulmonata													
Ferrissia californica (Rowell 1863)	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 6. Species list and abundance at sampling station Upcoy, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date												
	05-25-16	07-11-16	08-19-16	09-22-16	11-18-16	01-05-17	03-20-17	05-11-17	17-17-17	09-28-17	11-09-17	01-09-18	03-08-18
SubClass Pulmonata—Continued													
Gyraulus circumstriatus (Tryon 1866)	0	0	0	0	0	0	0	0	0	0	0	0	0
Helisoma anceps (Menke 1830)	0	0	0	0	0	0	0	0	0	0	0	0	0
Lymnaea humilis (Say *1825)*	0	0	0	0	0	0	0	0	0	0	0	0	0
Lymnaea columella (Say 1817)	0	0	0	0	0	0	0	0	0	0	0	0	0
Menetus dilatatus (Gould 1841)	0	0	0	0	0	0	0	0	0	0	0	0	0
Physa sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Radix auricularia (Linnaeus 1758)	0	0	0	0	0	0	0	0	0	0	0	0	0
SuperFamily Hydrobioidea													
Assiminea californica (Tryon 1865)	0	0	0	0	0	0	0	0	0	0	0	0	0
Boonea bisuturalis (Say 1822)	0	0	0	0	0	0	0	0	0	0	0	0	0
Crepidula plana Say 1822	0	0	0	0	0	0	0	0	0	0	0	0	0
Epitonium sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Fluminicola sp. A	0	0	0	0	0	0	0	0	0	0	0	0	0
Nassarius obsoletus (Say 1822)	0	0	0	0	0	0	0	0	0	0	0	0	0
Odostomia fetella Dall & Bartsch 1909	0	0	0	0	0	0	0	0	0	0	0	0	0
Class Bivalvia													
Arcuatula senhousia (Benson 1842)	5	8	6	3	8	6	0	0	0	0	0	0	0
Corbicula fluminea (O. F. Müller 1774)	0	0	0	0	0	0	0	0	0	0	0	0	0
Gemma gemma (Totten 1834)	121	9	3	9	63	48	0	1	2	0	0	0	0
Macoma petalum (Valenciennes 1821)	6	14	8	12	5	2	6	1	2	1	1	0	0
Musculium transversum (Say 1829)	0	0	0	0	0	0	0	0	0	0	0	0	0
Mya arenaria Linnaeus 1758	0	0	0	0	0	0	0	0	0	0	0	0	0
Pisidium casertanum (Poli 1791)	0	0	0	0	0	0	0	0	0	0	0	0	0
Pisidium compressum Prime 1852	0	0	0	0	0	0	0	0	0	0	0	0	0
Potamocorbula amurensis (Shrenck 1861)	6	15	25	127	217	131	6	7	19	9	3	75	12

Table 6. Species list and abundance at sampling station Upcoy, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date												
	05-25-16	07-11-16	08-19-16	09-22-16	11-18-16	01-05-17	03-20-17	05-11-17	17-17-17	09-28-17	11-09-17	01-09-18	03-08-18
Class Bivalvia—Continued													
Theora lubrica Gould 1861	0	0	0	0	0	0	0	0	0	0	0	0	0
Venerupis philippinarum (A. Adams & Reeve 1850)	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM CHORDATA													
Class Ascidacea													
Molgula manhattensis (De Kay 1843)	0	0	0	0	0	0	0	0	0	0	0	0	0
Styela clava (Herdman 1881)	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYLUM ECHINODERMATA													
Class Ophiuroidea													
Amphiuridae unid. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 7. Species list and abundance at sampling station SB14, Artesian Slough, California, May 2016–March 2018.

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. Cells containing values greater than zero are highlighted red. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date				
	03-28-17	06-30-17	09-28-17	12-06-17	03-08-18
PHYLUM CNIDARIA					
Class Anthozoa					
Actiniaria unid. spp	0	0	0	0	0
Diadumene sp. A	0	0	0	0	0
Flosmaris grandis Hand & Bushnell 1967	0	0	0	0	0
PHYLUM PLATYHELMINTHES					
Class Turbellaria					
Girardia tigrine (Girard, 1850)	0	0	0	0	0
Turbellaria unid. spp.	10	0	0	0	7
PHYLUM NEMATODA					
Nematoda unid. spp.	0	0	0	0	0
PHYLUM ANNELIDA					
Class Oligochaeta					
Naididae unid. spp.	0	0	0	0	0
Oligochaeta unid. spp.	270	148	176	202	426
Tubificidae unid. spp.	0	0	0	0	0
Order Hirudinida					
Gloiobdella elongata (Castle 1900)	0	0	0	0	0
Helobdella stagnalis (Linneaus 1758)	0	0	0	0	0
Helobdella triserialis (E. Blanchard 1849)	0	0	0	0	0
Mooreobdella microstoma (Moore 1901)	0	0	0	0	0
Placobdella montifera (Moore 1906)	0	0	0	0	0
Class Polychaeta					
Alitta brandti Malmgren 1865	0	0	0	0	0
Alitta succinea (Leuckart 1847)	0	0	0	0	0
Amaeana sp. A	0	0	0	0	0
Acmira catherinae (Laubier 1967)	0	0	0	0	0

Table 7. Species list and abundance at sampling station SB14, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. Cells containing values greater than zero are highlighted red. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date				
	03-28-17	06-30-17	09-28-17	12-06-17	03-08-18
Class Polychaeta—Continued					
Acmira lopezi (Berkeley & and Berkeley 1956)	0	0	0	0	0
Armandia brevis (Moore 1906)	0	0	0	0	0
Boccardiella ligerica (Ferronnière, 1898)	84	0	0	19	19
Capitella capitata (Frabricius 1780) complex	0	0	0	0	0
Cirratulidae unid. spp.	0	0	0	0	0
Cirriformia moorei Blacke 1996	0	0	0	0	0
Cossura sp. A	0	0	0	0	0
Dipolydora brachycephala Hartman 1936	0	0	0	0	0
Dipolydora caulleryi (Mesnil 1897)	0	0	0	0	0
Dipolydora socialis (Schmarda 1861)	0	0	0	0	0
Dipolydora unid. spp.	0	0	0	0	0
Eteone californica Hartman 1936	0	0	0	0	0
Eteone lighti Hartman 1936	0	0	0	1	0
Euchone limnicola Reish 1959	0	0	0	0	0
Exogone lourei Berkeley & Berkeley 1938	0	0	0	0	0
Glycera americana Leidy 1855	0	0	0	0	0
Glycinde armigera Moore 1911	0	0	0	0	0
Glycinde picta Berkele 1927	0	0	0	0	0
Glycinde sp. SF1	0	0	0	0	0
Harmothoe imbricata (Linneaus 1767)	0	0	0	0	0
Hediste limnicola (Johnson 1903)	1	0	0	0	1
Heteromastus filiformis (Claparède 1864)	0	0	0	0	0
Laonome calida Capa 2007	2	86	7	6	0
Leitoscoloplos pugettensis (Pettibone 1957)	0	0	0	0	0
Lumbrineris inflata Moore 1911	0	0	0	0	0

Table 7. Species list and abundance at sampling station SB14, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. Cells containing values greater than zero are highlighted red. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date				
	03-28-17	06-30-17	09-28-17	12-06-17	03-08-18
Class Polychaeta—Continued					
Manayunkia speciosa Leidy 1859	0	0	0	0	0
Marenzelleria neglecta Sikoski & Bick 2004	0	1	0	0	0
Marphysa sanguinea (Montagu 1813)	0	0	0	0	0
Megasyllis nipponica (Imajima 1966)	0	0	0	0	0
Neoamphitrite sp. A	0	0	0	0	0
Nephtys caecoides Hartman 1938	0	0	0	0	0
Nephtys cornuta (Berkeley & Berkeley 1945)	0	0	0	0	0
Nereis pelagica neonigripes Hartman 1936	0	0	0	0	0
Paleanotus bellis (Johnson 18970	0	0	0	0	0
Pectinaria californiensis Hartman 1941	0	0	0	0	0
Pholoides aspera (Johnson 1897)	0	0	0	0	0
Phyllodoce groenlandica Örsted 1842	0	0	0	0	0
Pista pacifica Berkeley & Berkeley 1942	0	0	0	0	0
Platynereis bicanaliculata (Baird 1863)	0	0	0	0	0
Polycirrus unid. spp.	0	0	0	0	0
Polydora cornuta Bosc 1802	0	0	0	1	1
Pseudopolydora kempi Southern 1921	0	0	0	0	0
Pseudopolydora paucibranchiata (Okuda 1937)	0	0	0	0	0
Sabaco elongatus (Verrill 1873)	0	0	0	0	0
Schistomeringos annulate (Moore 1906)	0	0	0	0	0
Schistomeringos longicornis (Ehlers 1901)	0	0	0	0	0
Scolelepis squamata (O.F. Muller 1806)	0	0	0	0	0
Scoletoma luti (Berkeley & Berkeley 1945)	0	0	0	0	0
Sphaerosyllis californiensis Hartman 1966	0	0	0	0	0
Sphaerosyllis sp. *A*	0	0	0	0	0
Spiophanes duplex (Chamberlin 1919)	0	0	0	0	0

Table 7. Species list and abundance at sampling station SB14, Artesian Slough, California, May 2016–March 2018 .—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. Cells containing values greater than zero are highlighted red. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date				
	03-28-17	06-30-17	09-28-17	12-06-17	03-08-18
Class Polychaeta—Continued					
Streblospio benedicti Webster 1879	0	0	0	5	11
Tharyx parvus Barkeley 1929	0	0	0	0	0
PHYLUM ARTHROPODA					
Class Crustacea					
SubClass Copepoda					
Cyclopid sp. A	0	0	0	0	0
SubClass Ostracoda					
Cypricercus sp. A	0	0	0	0	0
Cyclocypris sp. A	0	0	0	0	0
Eucypris sp. A	0	0	0	0	0
Herpetocypris brevicaudata Kaufmann 1900	0	0	0	0	0
Isocypris sp. A	0	0	0	0	0
Eusarsiella zostericola (Cushman 1906)	0	0	0	0	0
Cyprideis sp. A	1	0	472	32	0
Candona sp. A	0	0	0	0	0
SubClass Cirripedia					
Balanus improvisus Darwin 1854	0	0	0	0	0
SubClass Malacostraca					
Order Mysidacea					
Acanthomysis aspera Li 1964	0	0	0	0	0
Alienacanthomysis macropsis (W. Tattersall 1932)	0	0	0	0	0
Hyperacanthomysis longirostris (Li 1936)	0	1	0	0	0
Neomysis japonica Nakazawa 1910	0	0	0	0	0
Neomysis kadiakensis Ortmann 1908	0	0	0	1	0
Neomysis mercedis Holmes 1896	0	0	0	0	0

Table 7. Species list and abundance at sampling station SB14, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. Cells containing values greater than zero are highlighted red. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date				
	03-28-17	06-30-17	09-28-17	12-06-17	03-08-18
Order Cumacea					
Cumella vulgaris Hart 1930	0	0	0	0	0
Eudorella pacifica Hart 1930	0	0	0	0	0
Nippoleucon hinumensis (Gamo 1967)	0	13	62	47	574
Order Tanaidacea					
Sinelobus spp.	2	0	0	1	1
Order Isopoda					
Gnorimosphaeroma insulare (Van Name 1940)	0	0	0	0	0
Gnorimosphaeroma oregonensis Dana 1853	0	0	0	1	0
Paranthura japonica Richardson 1909	0	0	0	0	0
Synidotea laevidorsalis (Miers 1881)	0	0	0	13	2
Order Amphipoda					
Americhelidium shoemakeri (Mills 1962)	0	0	0	0	0
Americorophium spinicorne (Stimpson 1857)	106	0	0	0	102
Americorophium stimpsoni (Shoemaker 1941)	0	0	0	0	0
Ampelisca abdita (Mills 1964)	0	0	0	0	0
Ampelisca lobate Holmes 1908	0	0	0	0	0
Ampithoe plumulosa Shoemaker 1938	0	0	0	0	0
Ampithoe valida Smith 1873	0	0	1	0	0
Caprella mendax Mayer 1903	0	0	0	0	0
Caprella scaura Templeton 1836	0	0	0	0	0
Sinocorophium alienense (Chapman 1988)	0	0	0	0	0
Sinocorophium heteroceratum (Yu 1938)	0	0	0	0	0
Crangonyx floridanus Bousfield 1963	0	0	0	0	0

Table 7. Species list and abundance at sampling station SB14, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. Cells containing values greater than zero are highlighted red. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date				
	03-28-17	06-30-17	09-28-17	12-06-17	03-08-18
Order Amphipoda—Continued					
Eogammarus confervicolus (Stimpson 1856)	0	0	0	0	0
Eusiroidae unid. Spp.	0	0	0	0	0
Gammarus daiberi (Bousfield 1969)	0	2	0	0	6
Gnathopleustes pugettensis (Dana 1853)	0	0	0	0	0
Grandidierella japonica Stephensen 1938	0	0	51	790	86
Grandifoxus grandis (Stimpson 1856)	0	0	0	0	0
Hyalella sp. A	0	0	0	0	0
Melita nitida Smith 1873	0	0	0	0	0
Monocorophium acherusicum Costa 1853	0	0	0	1	0
Monocorophium insidiosum (Crawford 1937)	0	0	0	0	0
Monocorophium uenoi (Stephensen 1932)	0	0	0	0	0
Paradexamine sp. A	0	0	0	0	0
Photis brevipes Shoemaker 1942	0	0	0	0	0
Stenothoe valida Dana 1852	0	0	0	0	0
Talitridae unid. spp.	0	0	0	0	0
Order Decapoda					
Crangon franciscorum Stimpson 1856	0	0	0	0	0
Palaemon modestus (Heller 1862)	0	0	0	0	0
Palaemon macrodactylus Rathbun 1902	0	0	0	0	0
Decopoda unid. spp.	0	0	0	0	0
Class Insecta					
Family Chironomidae					
Chironomidae unid. spp.	10	0	0	0	2
PHYLUM MOLLUSCA					
Class Gastropoda					
Okenia plana Baba 1960	0	0	0	0	0

Table 7. Species list and abundance at sampling station SB14, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. Cells containing values greater than zero are highlighted red. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date				
	03-28-17	06-30-17	09-28-17	12-06-17	03-08-18
Class Gastropoda—Continued					
Onchidoris bilamellata (Linnaeus 1767)	0	0	0	0	0
Melanochlamys diomedea (Bergh 1894)	0	0	0	0	0
Nudibranchia unid. spp.	0	0	0	0	0
Philine auriformis Suter 1909	0	0	0	0	0
SubClass Pulmonata					
Ferrissia californica (Rowell 1863)	0	0	0	0	0
Gyraulus circumstriatus (Tryon 1866)	0	0	0	0	0
Helisoma anceps (Menke 1830)	0	0	0	0	0
Lymnaea humilis (Say *1825)*	0	0	0	0	0
Lymnaea columella (Say 1817)	0	0	0	0	0
Menetus dilatatus (Gould 1841)	0	0	0	0	0
Physa sp. A	0	0	0	0	0
Radix auricularia (Linnaeus 1758)	0	0	0	0	0
SuperFamily Hydrobioidea					
Assiminea californica (Tryon 1865)	0	0	0	0	0
Crepidula plana Say 1822	0	0	0	0	0
Epitonium sp. A	0	0	0	0	0
Fluminicola sp. A	0	0	0	0	0
Nassarius obsoletus (Say 1822)	0	0	0	0	0
Boonea bisuturalis (Say 1822)	0	0	0	0	0
Odostomia fetella Dall & Bartsch 1909	0	0	0	0	0
Class Bivalvia					
Corbicula fluminea (O. F. Müller 1774)	0	0	1	0	0
Gemma gemma (Totten 1834)	0	0	0	0	0
Macoma petalum (Valenciennes 1821)	0	0	0	0	0
Musculium transversum (Say 1829)	0	0	0	0	0
Arcuatula senhousia (Benson 1842)	0	0	0	0	0
Mya arenaria Linnaeus 1758	0	0	0	0	0

Table 7. Species list and abundance at sampling station SB14, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. Cells containing values greater than zero are highlighted red. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date				
	03-28-17	06-30-17	09-28-17	12-06-17	03-08-18
Class Bivalvia—Continued					
Pisidium casertanum (Poli 1791)	0	0	0	0	0
Pisidium compressum Prime 1852	0	0	0	0	0
Potamocorbula amurensis (Shrenck 1861)	1	0	1	45	4
Theora lubrica Gould 1861	0	0	0	0	0
Venerupis philippinarum (A. Adams & Reeve 1850)	0	0	0	0	0
PHYLUM CHORDATA					
Class Ascidacea					
Molgula manhattensis (De Kay 1843)	0	0	0	0	0
Styela clava (Herdman 1881)	0	0	0	0	0
PHYLUM ECHINODERMATA					
Class Ophiuroidea					
Amphiuridae unid. spp.	0	0	0	0	0

Table 8. Species list and abundance at sampling station SB15, Artesian Slough, California, May 2016–March 2018

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. Cells containing values greater than zero are highlighted red. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date				
	03-28-17	06-30-17	09-28-17	12-06-17	03-08-18
PHYLUM CNIDARIA					
Class Anthozoa					
Actiniaria unid. spp	0	0	0	0	0
Diadumene sp. A	0	0	0	0	0
Flosmaris grandis Hand & Bushnell 1967	0	0	0	0	0
PHYLUM PLATYHELMINTHES					
Class Turbellaria					
Girardia tigrine (Girard, 1850)	0	0	0	0	0
Turbellaria unid. spp.	4	0	0	0	0
PHYLUM NEMATODA					
Nematoda unid. spp.	0	0	0	0	0
PHYLUM ANNELIDA					
Class Oligochaeta					
Naididae unid. spp.	0	0	0	0	0
Oligochaeta unid. spp.	1,434	278	16	0	155
Tubificidae unid. spp.	0	0	0	0	0
Order Hirudinida					
Gloiobdella elongata (Castle 1900)	0	0	0	0	0
Helobdella stagnalis (Linneaus 1758)	0	0	0	0	0
Helobdella triserialis (E. Blanchard 1849)	0	0	0	0	0
Mooreobdella microstoma (Moore 1901)	0	0	0	0	0
Placobdella montifera (Moore 1906)	0	0	0	0	0
Class Polychaeta					
Alitta brandti Malmgren 1865	0	0	0	0	0
Alitta succinea (Leuckart 1847)	0	0	0	0	0
Amaeana sp. A	0	0	0	0	0
Acmira catherinae (Laubier 1967)	0	0	0	0	0

Table 8. Species list and abundance at sampling station SB15, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. Cells containing values greater than zero are highlighted red. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date				
	03-28-17	06-30-17	09-28-17	12-06-17	03-08-18
Class Polychaeta—Continued					
Acmira lopezi (Berkeley & and Berkeley 1956)	0	0	0	0	0
Armandia brevis (Moore 1906)	0	0	0	0	0
Boccardiella ligerica (Ferronnière, 1898)	23	4	0	0	1
Capitella capitata (Frabricius 1780) complex	0	0	0	0	0
Cirratulidae unid. spp.	0	0	0	0	0
Cirriformia moorei Blacke 1996	0	0	0	0	0
Cossura sp. A	0	0	0	0	0
Dipolydora brachycephala Hartman 1936	0	0	0	0	0
Dipolydora caulleryi (Mesnil 1897)	0	0	0	0	0
Dipolydora socialis (Schmarda 1861)	0	0	0	0	0
Dipolydora unid. spp.	0	0	0	0	0
Schistomeringos longicornis (Ehlers 1901)	0	0	0	0	0
Eteone californica Hartman 1936	0	0	0	0	0
Eteone lighti Hartman 1936	0	0	0	0	0
Euchone limnicola Reish 1959	0	0	0	0	0
Exogone lourei Berkeley & Berkeley 1938	0	0	0	0	0
Glycera americana Leidy 1855	0	0	0	0	0
Glycinde armigera Moore 1911	0	0	0	0	0
Glycinde picta Berkele 1927	0	0	0	0	0
Glycinde sp. SF1	0	0	0	0	0
Harmothoe imbricata (Linneaus 1767)	0	0	0	0	0
Hediste limnicola (Johnson 1903)	0	0	0	0	0
Heteromastus filiformis (Claparède 1864)	0	0	0	0	0
Laonome calida Capa 2007	1	45	0	0	0
Leitoscoloplos pugettensis (Pettibone 1957)	0	0	0	0	0
Lumbrineris inflata Moore 1911	0	0	0	0	0

Table 8. Species list and abundance at sampling station SB15, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. Cells containing values greater than zero are highlighted red. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date				
	03-28-17	06-30-17	09-28-17	12-06-17	03-08-18
Class Polychaeta—Continued					
Manayunkia speciosa Leidy 1859	0	0	0	0	0
Marenzelleria neglecta Sikoski & Bick 2004	0	0	0	0	1
Marphysa sanguinea (Montagu 1813)	0	0	0	0	0
Neoamphitrite sp. A	0	0	0	0	0
Nephtys caecoides Hartman 1938	0	0	0	0	0
Nephtys cornuta (Berkeley & Berkeley 1945)	0	0	0	0	0
Nereis pelagica neonigripes Hartman 1936	0	0	0	0	0
Paleanotus bellis (Johnson 18970	0	0	0	0	0
Pectinaria californiensis Hartman 1941	0	0	0	0	0
Pholoides aspera (Johnson 1897)	0	0	0	0	0
Phyllodoce groenlandica Örsted 1842	0	0	0	0	0
Pista pacifica Berkeley & Berkeley 1942	0	0	0	0	0
Platynereis bicanaliculata (Baird 1863)	0	0	0	0	0
Polycirrus unid. spp.	0	0	0	0	0
Polydora cornuta Bosc 1802	0	0	0	0	0
Pseudopolydora kempi Southern 1921	0	0	0	0	0
Pseudopolydora paucibranchiata (Okuda 1937)	0	0	0	0	0
Sabaco elongatus (Verrill 1873)	0	0	0	0	0
Schistomeringos annulate (Moore 1906)	0	0	0	0	0
Scolelepis squamata (O.F. Muller 1806)	0	0	0	0	0
Scoletoma luti (Berkeley & Berkeley 1945)	0	0	0	0	0
Sphaerosyllis californiensis Hartman 1966	0	0	0	0	0
Sphaerosyllis sp. *A*	0	0	0	0	0
Spiophanes duplex (Chamberlin 1919)	0	0	0	0	0
Streblospio benedicti Webster 1879	0	0	0	0	0

Table 8. Species list and abundance at sampling station SB15, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. Cells containing values greater than zero are highlighted red. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date				
	03-28-17	06-30-17	09-28-17	12-06-17	03-08-18
Class Polychaeta—Continued					
Tharyx parvus Barkeley 1929	0	0	0	0	0
Megasyllis nipponica (Imajima 1966)	0	0	0	0	0
PHYLUM ARTHROPODA					
Class Crustacea					
SubClass Copepoda					
Cyclopid sp. A	0	0	0	0	0
SubClass Ostracoda					
Cypricercus sp. A	0	0	0	0	0
Cyclocypris sp. A	0	0	0	0	0
Eucypris sp. A	0	0	0	0	0
Herpetocypris brevicaudata Kaufmann 1900	0	0	0	0	0
Isocypris sp. A	0	0	0	0	0
Eusarsiella zostericola (Cushman 1906)	0	0	0	0	0
Cyprideis sp. A	29	1,842	1,758	15,040	1,351
Candona sp. A	0	0	0	0	0
SubClass Cirripedia					
Balanus improvisus Darwin 1854	0	0	0	0	0
SubClass Malacostraca					
Order Mysidacea					
Acanthomysis aspera Li 1964	0	0	0	0	0
Alienacanthomysis macropsis (W. Tattersall 1932)	0	0	0	0	0
Hyperacanthomysis longirostris (Li 1936)	0	0	0	0	0
Neomysis japonica Nakazawa 1910	0	0	0	0	0
Neomysis kadiakensis Ortmann 1908	0	0	0	0	0
Neomysis mercedis Holmes 1896	0	0	0	0	0

Table 8. Species list and abundance at sampling station SB15, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. Cells containing values greater than zero are highlighted red. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date				
	03-28-17	06-30-17	09-28-17	12-06-17	03-08-18
Order Cumacea					
Cumella vulgaris Hart 1930	0	0	0	0	0
Eudorella pacifica Hart 1930	0	0	0	0	0
Nippoleucon hinumensis (Gamo 1967)	3	0	1	0	384
Order Tanaidacea					
Sinelobus spp.	0	0	0	2	2
Order Isopoda					
Gnorimosphaeroma insulare (Van Name 1940)	0	0	0	0	0
Gnorimosphaeroma oregonensis Dana 1853	0	0	0	0	0
Paranthura japonica Richardson 1909	0	0	0	0	0
Synidotea laevidorsalis (Miers 1881)	0	0	0	0	0
Order Amphipoda					
Americhelidium shoemakeri (Mills 1962)	0	0	0	0	0
Americorophium spinicorne (Stimpson 1857)	44	1	0	0	248
Americorophium stimpsoni (Shoemaker 1941)	0	0	0	0	0
Ampelisca abdita (Mills 1964)	0	0	0	0	0
Ampelisca lobate Holmes 1908	0	0	0	0	0
Ampithoe plumulosa Shoemaker 1938	0	0	0	0	0
Ampithoe valida Smith 1873	0	0	0	0	0
Caprella mendax Mayer 1903	0	0	0	0	0
Caprella scaura Templeton 1836	0	0	0	0	0
Sinocorophium alienense (Chapman 1988)	0	0	0	1	0
Sinocorophium heteroceratum (Yu 1938)	0	0	0	0	0
Crangonyx floridanus Bousfield 1963	0	0	0	0	0
Eogammarus confervicolus (Stimpson 1856)	0	0	0	0	0

Table 8. Species list and abundance at sampling station SB15, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. Cells containing values greater than zero are highlighted red. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date				
	03-28-17	06-30-17	09-28-17	12-06-17	03-08-18
Order Amphipoda—Continued					
Eusiroidae unid. Spp.	0	0	0	0	31
Gammarus daiberi (Bousfield 1969)	0	4	0	0	0
Gnathopleustes pugettensis (Dana 1853)	0	0	0	0	25
Grandidierella japonica Stephensen 1938	0	0	0	4	0
Grandifoxus grandis (Stimpson 1856)	0	0	0	0	0
Hyalella sp. A	0	0	0	0	0
Melita nitida Smith 1873	0	0	0	0	0
Monocorophium acherusicum Costa 1853	0	0	0	0	0
Monocorophium insidiosum (Crawford 1937)	0	0	0	0	0
Monocorophium uenoi (Stephensen 1932)	0	0	0	0	0
Paradexamine sp. A	0	0	0	0	0
Photis brevipes Shoemaker 1942	0	0	0	0	0
Stenothoe valida Dana 1852	0	0	0	0	0
Talitridae unid. spp.	0	0	0	0	0
Order Decapoda					
Crangon franciscorum Stimpson 1856	0	0	0	0	0
Palaemon modestus (Heller 1862)	0	0	0	0	0
Palaemon macrodactylus Rathbun 1902	0	0	0	0	0
Decopoda unid. spp.	0	0	0	0	0
Class Insecta					
Family Chironomidae					
Chironomidae unid. spp.	1	1	15	3	20
PHYLUM MOLLUSCA					
Class Gastropoda					
Okenia plana Baba 1960	0	0	0	0	0
Onchidoris bilamellata (Linnaeus 1767)	0	0	0	0	0
Melanochlamys diomedea (Bergh 1894)	0	0	0	0	0

Table 8. Species list and abundance at sampling station SB15, Artesian Slough, California, May 2016–March 2018.—Continued

[Species and abundance data are shown in number per 0.05 per square meter. Species typically found in the southern San Francisco Bay are included in this table despite not being recorded in this study. Cells containing values greater than zero are highlighted red. **Abbreviations:** unid., denotes taxa that could not be identified to the species level but could be categorized to a higher classification; sp., denotes a single species identified to the genus level; spp., denotes many species of the same genera; SF1, denotes separate species of the same genera]

Taxon	Sampling date				
	03-28-17	06-30-17	09-28-17	12-06-17	03-08-18
Class Gastropoda—Continued					
Nudibranchia unid. spp.	0	0	0	0	0
Philine auriformis Suter 1909	0	0	0	0	0
SubClass Pulmonata					
Ferrissia californica (Rowell 1863)	0	0	0	0	0
Gyraulus circumstriatus (Tryon 1866)	0	0	0	0	0
Helisoma anceps (Menke 1830)	0	0	0	0	0
Lymnaea humilis (Say *1825)*	0	0	0	0	0
Lymnaea columella (Say 1817)	0	0	0	0	0
Menetus dilatatus (Gould 1841)	0	0	0	0	0
Physa sp. A	0	0	0	0	0
Radix auricularia (Linnaeus 1758)	0	0	0	0	0
SuperFamily Hydrobioidea					
Assiminea californica (Tryon 1865)	0	0	0	0	0
Boonea bisuturalis (Say 1822)	0	0	0	0	0
Crepidula plana Say 1822	0	0	0	0	0
Epitonium sp. A	0	0	0	0	0
Fluminicola sp. A	0	0	0	0	0
Nassarius obsoletus (Say 1822)	0	0	0	0	0
Odostomia fetella Dall & Bartsch 1909	0	0	0	0	0
Class Bivalvia					
Arcuatula senhousia (Benson 1842)	0	0	0	0	0
Corbicula fluminea (O. F. Müller 1774)	0	0	0	0	0
Gemma gemma (Totten 1834)	0	0	0	0	0
Macoma petalum (Valenciennes 1821)	0	0	0	0	0
Musculium transversum (Say 1829)	0	0	0	0	0
Mya arenaria Linnaeus 1758	0	0	0	0	0
Pisidium casertanum (Poli 1791)	0	0	0	0	0

Table 8. Species list and abundance at sampling station SB15, Artesian Slough, California, May 2016–March 2018.—Continued

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Taxon	Sampling date				
	03-28-17	06-30-17	09-28-17	12-06-17	03-08-18
Class Bivalvia—Continued					
Pisidium compressum Prime 1852	0	0	0	0	0
Potamocorbula amurensis (Shrenck 1861)	0	0	0	0	0
Theora lubrica Gould 1861	0	0	0	0	0
Venerupis philippinarum (A. Adams & Reeve 1850)	0	0	0	0	0
PHYLUM CHORDATA					
Class Ascidacea					
Molgula manhattensis (De Kay 1843)	0	0	0	0	0
Styela clava (Herdman 1881)	0	0	0	0	0
PHYLUM ECHINODERMATA					
Class Ophiuroidea					
Amphiuridae unid. spp.	0	0	0	0	0

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