

SEATTLE AQUARIUM CITIZEN SCIENCE 2008 DATA REPORT NARRATIVE

Mark Plunkett (8-26-08)

INTRO

In the spring of 2008 Citizen Science-trained high school students conducted habitat characterization and relative abundance surveys on seven Seattle-area beaches: Carkeek Park, Golden Gardens, Discovery Park, South Alki Beach (Richey Viewpoint), Schmitz Memorial (Me-Kwa-Mooks), Lincoln Park and Seahurst Park. Schools included: Ballard, West Seattle, Garfield, Rainer Beach, Highline, Tyee/Academy of Citizenship and Empowerment and the Puget Sound Skills Center/Environmental and Marine Program. Habitat characterization included slope, substrate and habitat features within 3m x 4m plots along a transect line running from the backshore to -2.0' (MLLW) tidal level. Relative abundance surveyors recorded presence/absence of 24 selected species (or groups of species) found within four 1/4m square quadrats randomly placed within the same 3m x 4m plots. The Aquarium intends to continue these surveys with trained students for another 12 years to determine potential trends along the beaches. The Seattle Aquarium wishes to acknowledge the partnership of the following with database management: WSU/Island County Beach Watchers, King County Dept. of Natural Resources and Parks, Seattle Public Utilities Science Team and the Univ. of Washington Friday Harbor Laboratories.

SUMMARY FINDINGS

For ease of graphing, the 24 target species (or groups) were pooled together into 12 categories/beach. Bar graphs compare one bar for each category at each beach for 2007 and 2008. Each category bar is the total number of times a species (or group) was found in all quadrats. The Seattle Aquarium cautions against comparing observations between beaches due to natural variables between sites such as slope, substrate, wave exposure, freshwater runoff, etc. Our intent is to document potential year to year changes per beach. The most commonly seen category at all seven beaches both years were macroflora (algae and eelgrass). Fauna categories seen in one-quarter to one-third of all quadrats per beach included barnacles, snails and limpets, with crabs and chitons frequently seen as well. Occasionally sea anemones, isopods, sea stars, nudibranchs (sea slugs), blue mussels and fishes were found. The most noticeable year-to-year differences include: fewer barnacles observed at each beach, more macroflora at four sites, more seastars at four locations and more blue mussels at five spots. Variations may be due to different data collectors (students) each year, changes in harvesting pressure by beachgoers and natural ecological variability.

FURTHER INFORMATION

For further information on Citizen Science data and access to the full database contact Mark Plunkett, Seattle Aquarium Conservation Curator at mark.plunkett@seattle.gov or 206.386.4344. To inquire about participating as a high school in the program contact Citizen Science project manager Karen Matsumoto at karen.matsumoto@seattle.gov or 206.386.4303. For additional shoreline monitoring activities see the WSU/Island County Beach Watchers Program at <http://www.beachwatchers.wsu.edu/island/>.

Key Species/Taxa

CNIDARIA

Anthopleura anemones (*A. elegantissima*, *A. artemisia*)

ARTHROPODA

red rock crab (*Cancer productus*)

shore crabs (*Hemigrapsus spp.*)

hermit crabs (*Pagurus spp.*)

barnacles (*Balanus*, *Semibalanus*, *Chthamalus spp.*)

isopods (*Idotea spp.*, *Gnorimosphaeroma sp.*)

ECHINODERMATA

purple/ochre sea star (*Pisaster ochraceus*)

mottled sea star (*Evasterias troschelii*)

MOLLUSCA

chitons (*Mopalia spp.*)

limpets (*Lottidae*)

whelks (*Nucella spp.*)

periwinkle snails (*Littorinia spp.*)

shaggy mouse nudibranch (*Aeolida papillosa*)

opalescent nudibranch (*Hermisenda crassicornis*)

blue mussel (*Mytilus trossulus*)

FISHES

tidepool sculpin (*Oligocottus maculosus*)

gunnels/pricklebacks (*Pholidae/Stichaeidae*)

MACROFLORA

Ulvoids (*Ulva spp.*, et al)

kelp (*Nereocystis*, *Laminaria*, *Alaria spp.*, et al)

rockweed (*Fucus spp.*)

sargassum (*Sargassum muticum*)

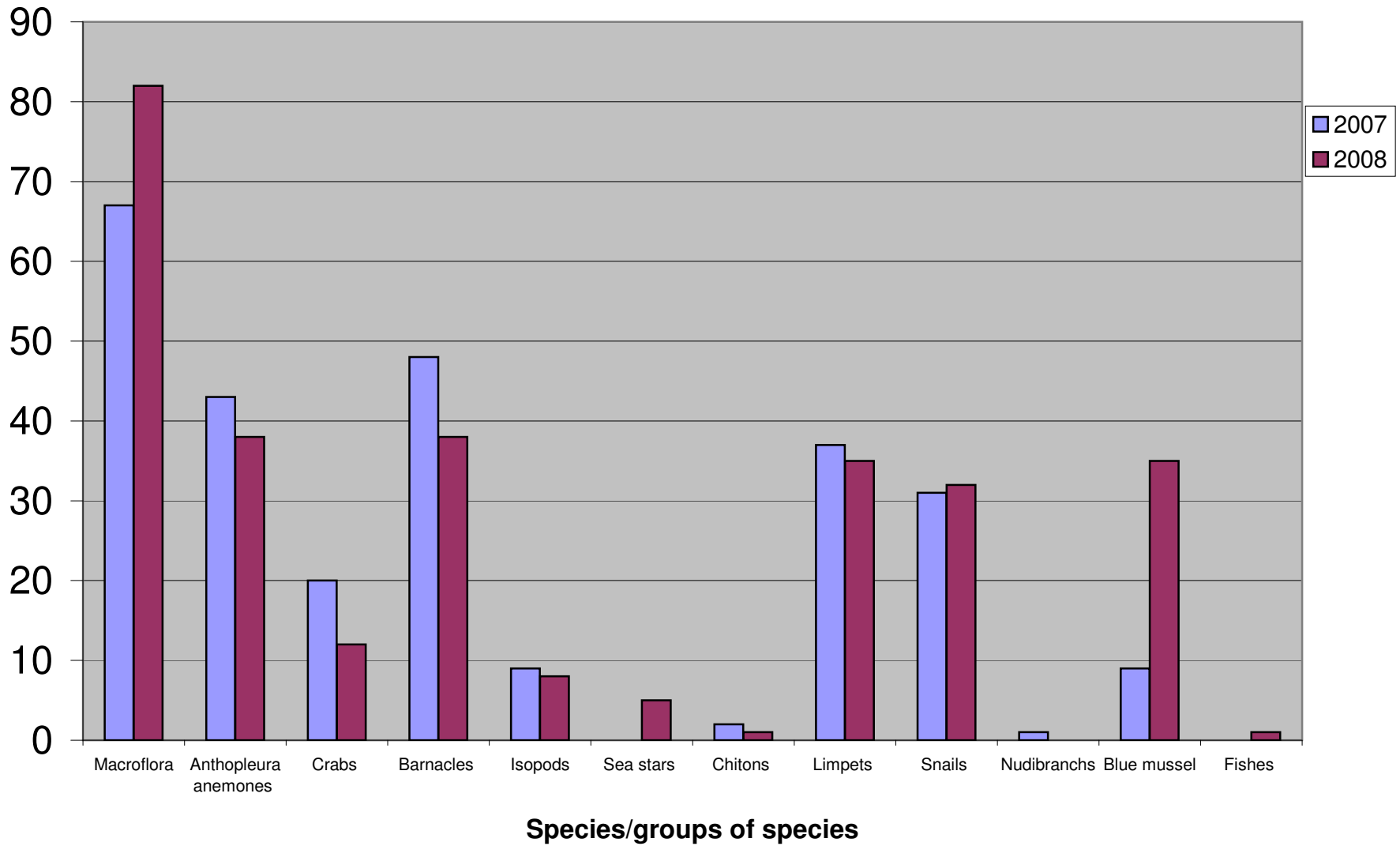
red blades (*Mazzaella*, *Porphyra*, *Mastocarpus spp.*, et al)

red filaments (*Polysiphonia*, *Ceramium*, *Odonthallia spp.*, et al)

eelgrass (*Zostera spp.*)

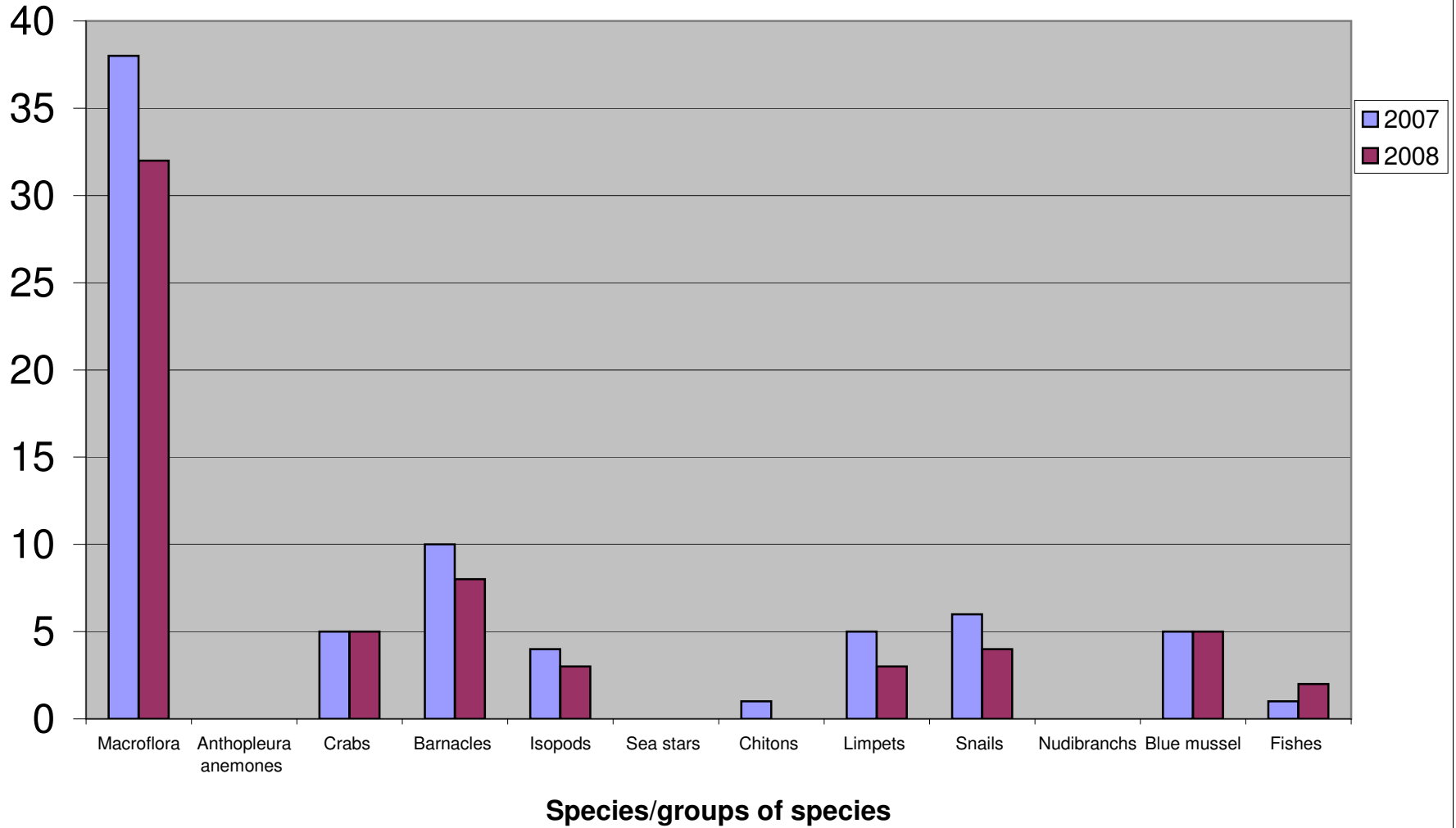
SOUTH ALKI INTERTIDAL FLORA AND FAUNA

Total observed, all quadrats (56)



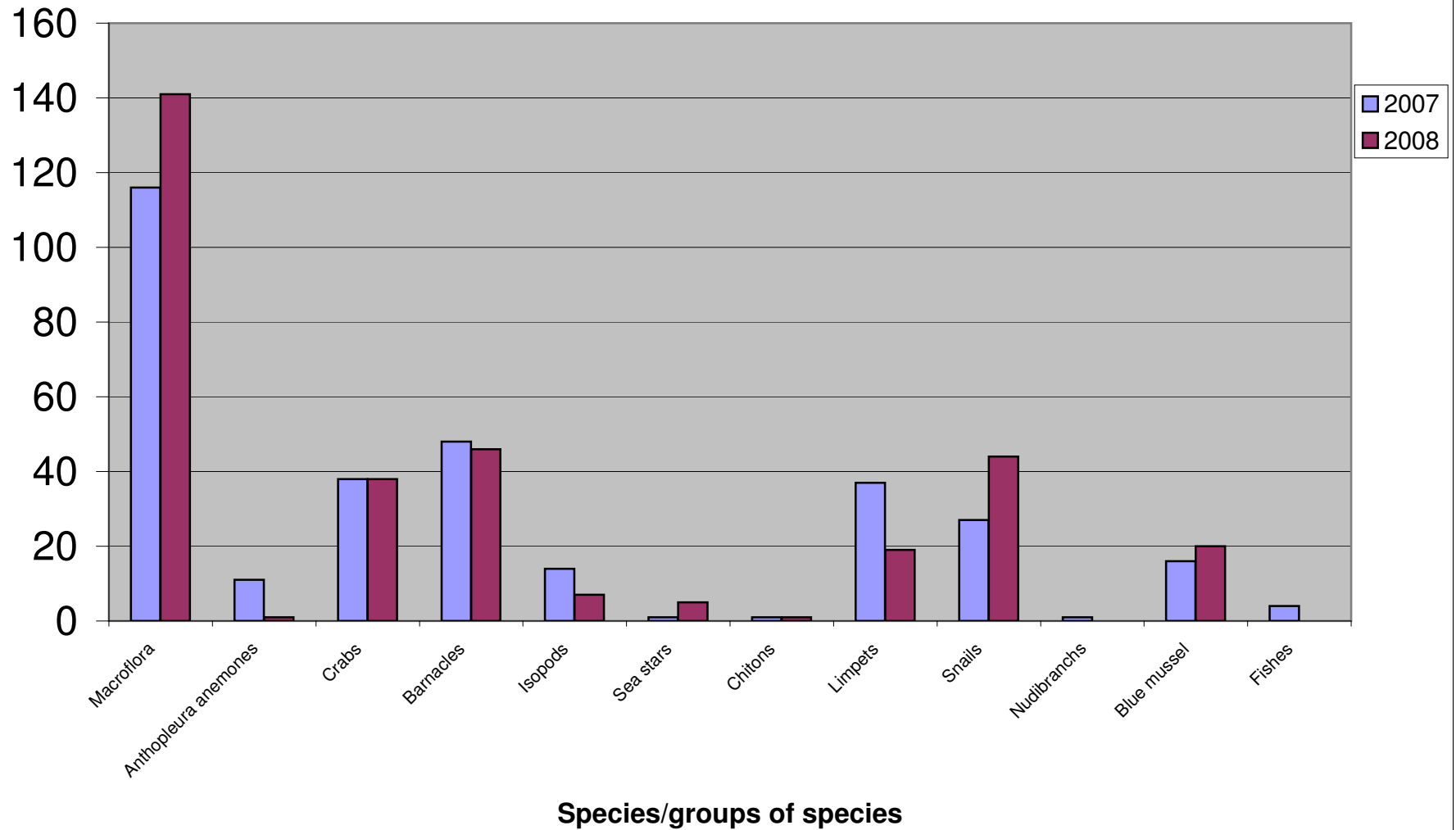
CARKEEK PARK INTERTIDAL FLORA AND FAUNA

Total observed, all quadrats (44)



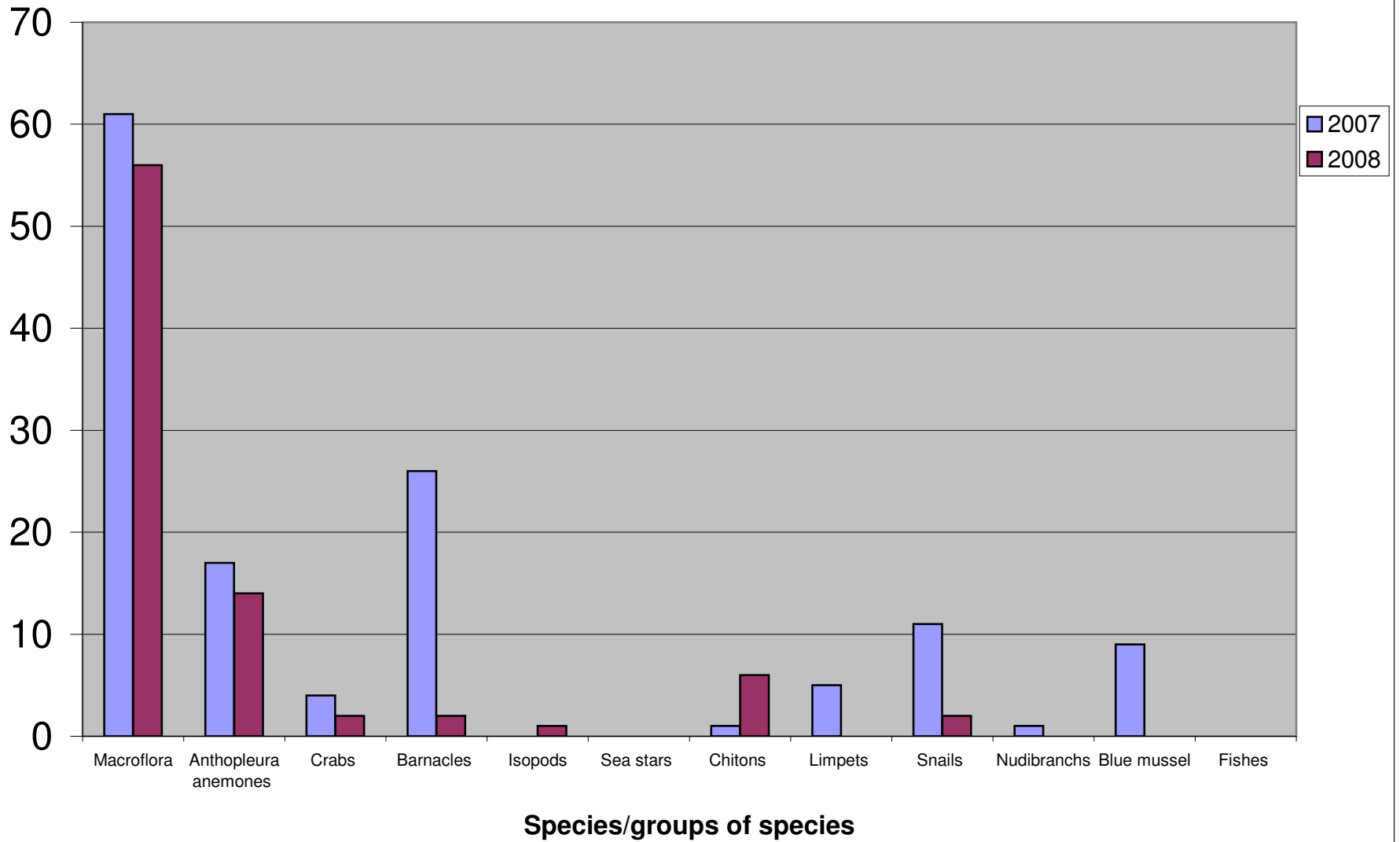
DISCOVERY PARK INTERTIDAL FLORA AND FAUNA

Total observed, all quadrats (64)



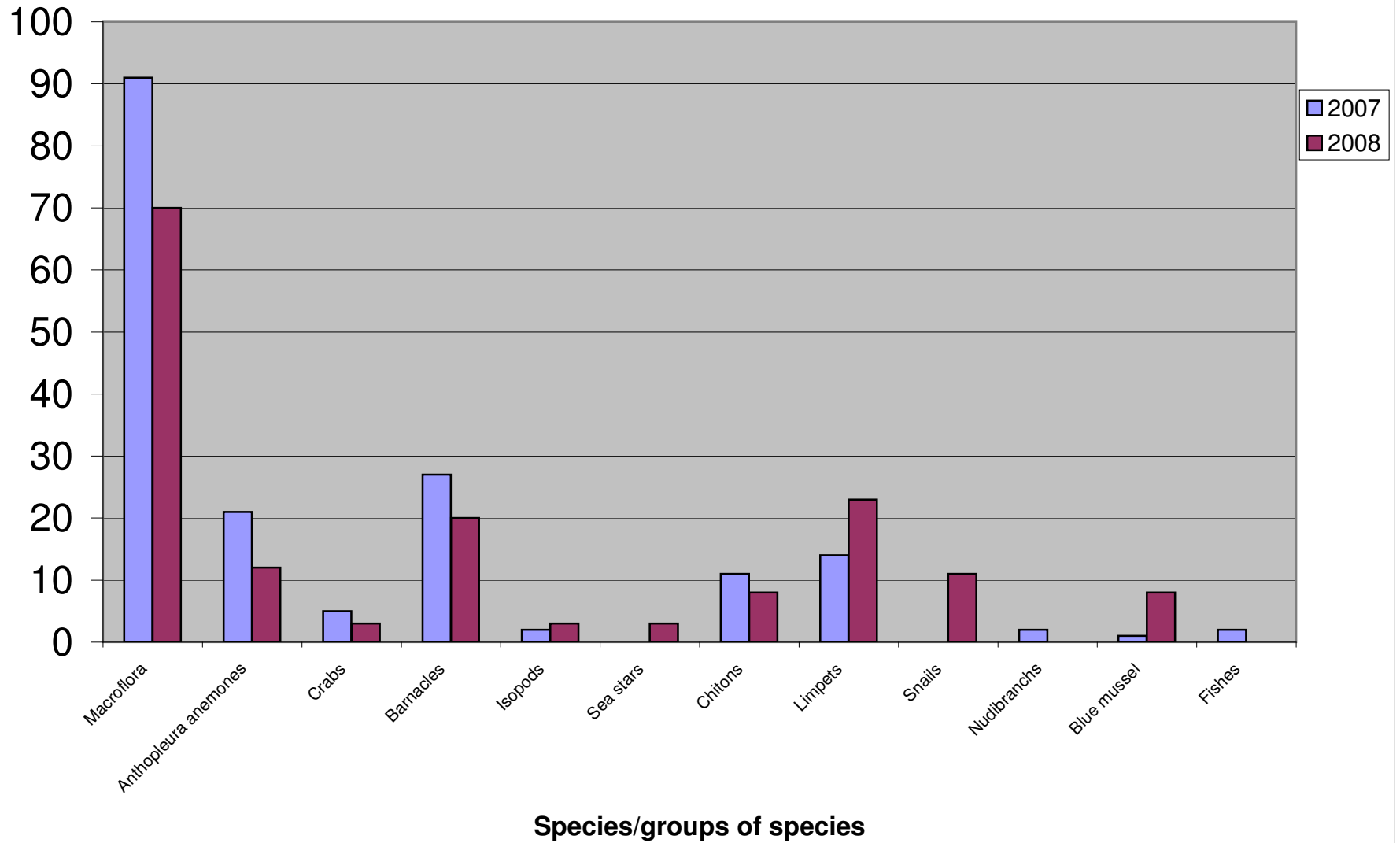
GOLDEN GARDENS INTERTIDAL FLORA AND FAUNA

Total observed, all quadrats (40)



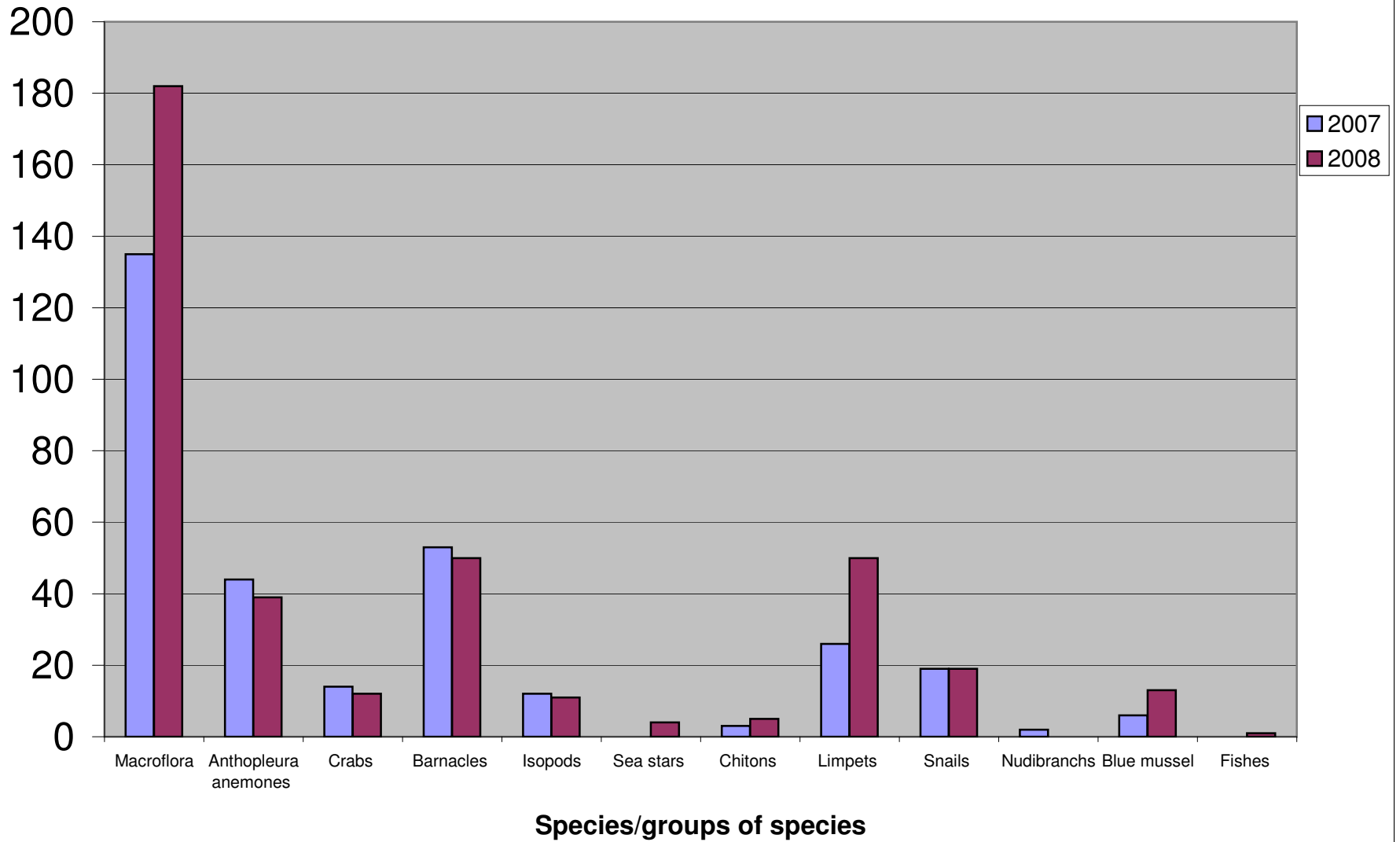
LINCOLN PARK INTERTIDAL FLORA AND FAUNA

Total observed, all quadrats (36)



SCHMITZ MEMORIAL INTERTIDAL FLORA AND FAUNA

Total observed, all quadrats (64)



SEAHURST INTERTIDAL FLORA AND FAUNA

Total observed, all quadrats (48)

