

California Marine Life Protection Act Initiative
Addendum to *Methods Used to Evaluate Draft MPA Proposals in the*
North Central Coast Study Region: Known important prey for
the harbor seal in north central California
January 21, 2008

The information in the table below is extracted from pg. 31 of the draft evaluation methods document, but incorporates additional information on harbor seal forage species.

Table 5. Known important prey items of Brandt's cormorant, pelagic cormorant, pigeon guillemot, and harbor seal in north central California. Most fish taken by seabirds are in the juvenile stage.¹

Species	Fish	Preferred foraging habitat
Brandt's cormorant	Fish Short-belly rockfish <i>Sebastes jordani</i> Yellowtail rockfish <i>Sebastes flavidus</i> Other rockfish <i>Sebastes</i> spp. Pacific sandlance <i>Ammodytes hexapterus</i> Plainfin midshipman <i>Porichthys notatus</i> Speckled sanddab <i>Citharichthys stigmaeus</i> <i>Hemilepidotus</i> spp. White seaperch <i>Phanerodon furcatus</i> Northern anchovy <i>Engraulis mordax</i> Pacific herring <i>Clupea pallasii</i> Pacific staghorn sculpin <i>Leptocottus armatus</i> <i>Hemilepidotus</i> spp. (Cottidae) Other sculpins (Cottidae) Pacific tomcod <i>Microgadus proximus</i> Northern Pacific hake <i>Merluccius productus</i> Shiner perch <i>Cymatogaster aggregata</i> Pacific tomcod <i>Microgadus proximus</i> Spotted cusk-eel <i>Chilara taylori</i> Butter sole <i>Isopsetta isolepis</i> Rex sole <i>Glyptocephalus zachirus</i> English sole <i>Parophrys vetulus</i> Invertebrates Market squid <i>Loligo opalescens</i>	Soft bottom
Pelagic cormorant	Fish Short-belly rockfish <i>Sebastes jordani</i> Yellowtail rockfish <i>Sebastes flavidus</i> Other rockfish <i>Sebastes</i> spp. Sculpins (Cottidae) <i>Coryphopterus nicholsii</i> <i>Chilara taylori</i> Invertebrates Mysid shrimp <i>Spirontocaris</i> sp.	Submerged reefs
Pigeon guillemot	Fish Rockfish <i>Sebastes</i> spp. Pacific sanddab <i>Citharichthys sordidus</i>	Submerged reefs

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	Blennies (Clinidae) Sculpins (Cottidae) Gunnels (Pholidae) Spotted cusk-eel <i>Chilara taylori</i> Invertebrates Red octopus <i>Octopus rufescens</i>	
Harbor seal	Fish Rockfish <i>Sebastes</i> spp. Pacific sandlance <i>Ammodytes hexapterus</i> Plainfin midshipman <i>Porichthys notatus</i> Speckled sanddab <i>Citharichthys stigmaeus</i> <i>Hemilepidotus</i> spp. Northern anchovy <i>Engraulis mordax</i> Pacific herring <i>Clupea pallasii</i> Pacific staghorn sculpin <i>Leptocottus armatus</i> <i>Hemilepidotus</i> spp. (Cottidae) Other sculpins (Cottidae) Pacific tomcod <i>Microgadus proximus</i> Northern Pacific hake <i>Merluccius productus</i> Shiner perch <i>Cymatogaster aggregata</i> Spotted cusk-eel <i>Chilara taylori</i> Butter sole <i>Isopsetta isolepis</i> Rex sole <i>Glyptocephalus zachirus</i> English sole <i>Parophrys vetulus</i> Salmonid Lamprey Hagfish Invertebrates Mysid shrimp <i>Spirontocaris</i> spp. Market squid <i>Loligo opalescens</i>	

† Data on seabird prey items from Ainley et al. (1990) and PRBO Conservation Science (unpubl. data).
 Source for Table 5: Ainley, D.G., C.S. Strong, T.M. Penniman, and R.J. Boekelheide. 1990. The feeding ecology of Farallon seabirds. Pp. 51-127 in (D.G. Ainley and R.J. Boekelheide, eds.), *Seabirds of the Farallon Islands: Ecology, Dynamics, and Structure of an Upwelling-system Community*. Stanford University Press, Stanford, California. Data on harbor seals from Harvey et al. 1995 and Harvey and Torok. 1994