

Table 3.5. A summary of temporal and spatial associations of selected marine birds off north/central California.

Family Name/ Species Common Name	Seasonal Occurrence			Associations with Large Bathymetrically-Defined Areas					Occurs Mostly Outside Sanctuaries	Associations with Discrete Physiographic/Oceanic Fe										
	Upwelling Season (3/15-8/14)	Ocean Season (8/15-11/14)	Davidson Current Season (11/15-3/14)	Coast & Inner Shelf (0-100m)	Outer Shelf (100-200m)	Upper Slope (200-1,000m)	Lower Slope (1,000M-2,000m)	Deep Ocean (beyond 2,000m)		Cordell Bank	Bodega Canyon	Fanny Shoal	Farallon Escarpment	Farallon Ridge	San Francisco Bay Plume	Pioneer Seamount	Pioneer Canyon	Ascension, Cabrillo, & Año Canyons	Pt. Año Nuevo	Mont-erey Canyon
<b>Gaviidae</b>																				
Pacific Loon	X		***X									x		x					x	
<b>Podicipedidae</b>																				
Western and Clark's Grebes	x	x	**X	X										X					x	
<b>Anatidae</b>																				
White-winged Scoter	o	x	**X	X										X						
Surf Scoter	o	x	**X	X										X						
<b>Diomedidae</b>																				
Black-footed Albatross	***X	x	x		X	X	X	x	X		X	X				x	x		X	
Laysan Albatross	x	o	***X		X	X	X	x	X			X								
<b>Procellariidae</b>																				
Northern Fulmar	x	x	***X		X	X	X	x		x	x	x	X	x		x	x		x	
Sooty Shearwater	***X	x	o	X	X	X	x	x	X	x	x	x	x	X		X	X		X	
Short-tailed Shearwater	o	o	***X		X	X	x	x			X					x				
Pink-footed shearwater	***X	x	o	X	X	X	x	x		x		x	X	x			x		X	
Buller's Shearwater	o	***X	o		X	X	X	x	X		x	X	x		x	x	x		x	
Black-vented Shearwater	o	**X	x		X	X						x	X	x		x	x		x	
<b>Hydrobatidae</b>																				
Leach's Storm-Petrel	**X	**X	o					X	X			X			x	x	x			
Fork-tailed Storm-Petrel	o	o	X		x	X	X	x	X			X			x		x			
Ashy Storm-Petrel	**X	**X	**X		x	X	X	x	X	x	X	X				x	x		X	
Black Storm-Petrel	o	**X	**X		x	X	X				X				x	x			X	
<b>Pelecanidae</b>																				
California Brown Pelican	**X	**X	x	X	x					x			x	X					X	
<b>Phalacrocoracidae</b>																				
Brandt's Cormorant	***X	***X	***X	X	X					x		x	X	X					X	
Pelagic Cormorant	**X	**X	**X	X							x	X	x						x	
Double-crested Cormorant	*X	o	o						X		x	X	X							
<b>Scolopacidae</b>																				
Red Phalarope	***X	x	o		X	X	X	x	X		x	X				x	x		x	
Red-necked Phalarope	***X	x	o	X	X	x	x			x	x	x	x		x	x			x	
<b>Laridae</b>																				
Glaucous-winged Gull	o	x	***X	X	X	x				x	x	x	x	X		x	x			
Western Gull	***X	***X	***X	X	X	X	x			x	x	X	X	X					X	
California Gull	o	x	***X	X	X	x				x				X					x	
Ring-billed Gull	o	x	**X	X	x									X						
Mew Gull	o	x	**X	X	x									X						
Heermann's Gull	o	x	**X	X	x									X						
Bonaparte's Gull	***X	x	o	x	X	X	x								X	x			X	
Sabines Gull	***X	x	o				X	X	X		x	X			x	x			X	
Black-legged Kittiwake	x	o	***X		X	X	X	x	X		x	x	X		x	x	x		x	
Caspian/Elegant Terns	**X	x	o	X										X						
Arctic Tern	***X	***X	o			x	x	X	X		x		X		x	x	x		x	
Forster's Tern	**X	x	o	X										X						
<b>Alcidae</b>																				
Common Murre	***X	***X	***X	X	X	x	x			x	x	x	X	X					x	
Pigeon Guillemot	**X	x	o	X	X														x	
Cassin's Auklet	***X	***X	x		X	X	x			X	x	X	X		x					
Rhinoceros Auklet	***X	***X	x		x	X	X			x	x	x	x		x	x	X		x	
Tufted Puffin	*X	x	o		x	X	X	X				X	X		x					
Marbled Murrelet	*X	*X	*X	X													x	X		
Xantus/Craver's Murrelets	***X	x	x			X	X	X	X			X								
<b>All Xs</b>	<b>29</b>	<b>35</b>	<b>27</b>	<b>21</b>	<b>28</b>	<b>24</b>	<b>22</b>	<b>16</b>	<b>11</b>	<b>13</b>	<b>14</b>	<b>14</b>	<b>22</b>	<b>17</b>	<b>20</b>	<b>6</b>	<b>18</b>	<b>19</b>	<b>11</b>	<b>15</b>
<b>Large X's</b>	<b>25</b>	<b>14</b>	<b>21</b>	<b>20</b>	<b>19</b>	<b>19</b>	<b>13</b>	<b>5</b>	<b>11</b>	<b>3</b>	<b>1</b>	<b>4</b>	<b>16</b>	<b>9</b>	<b>17</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>5</b>	<b>7</b>

Notes

1. A summary of temporal and spatial patterns in the occurrence of 44 marine birds off north/central California, based on visual inspection of the species' seasonal density maps by the principal investigators.
2. The spatial and temporal patterns summarized here may be affected by variation in the sampling effort in the CDAS data set; that said, this table is included because it provides a summary of the use of the various habitat features, as viewed in the species maps.
3. In the "seasonal occurrence" columns, the number of asterisks indicate the number of sanctuaries in the study area that are used by the species during the season. A large "X" means a relatively major occurrence in the data sets, a small "x" means a minor occurrence and a "o" means the species was mostly absent).
4. Under the heading for "large, bathymetrically-defined areas", a large "X" indicates where the species was most abundant, a small "x" means a minor occurrence, and a "o" means the species was mostly absent).
5. Under the heading for "discrete physiographic/oceanic features", large X's refer to 'hot spots'; small x's indicate areas of secondary importance for that species. A blank in the table means a species was not present at the location indicated in the maps/data reviewed.