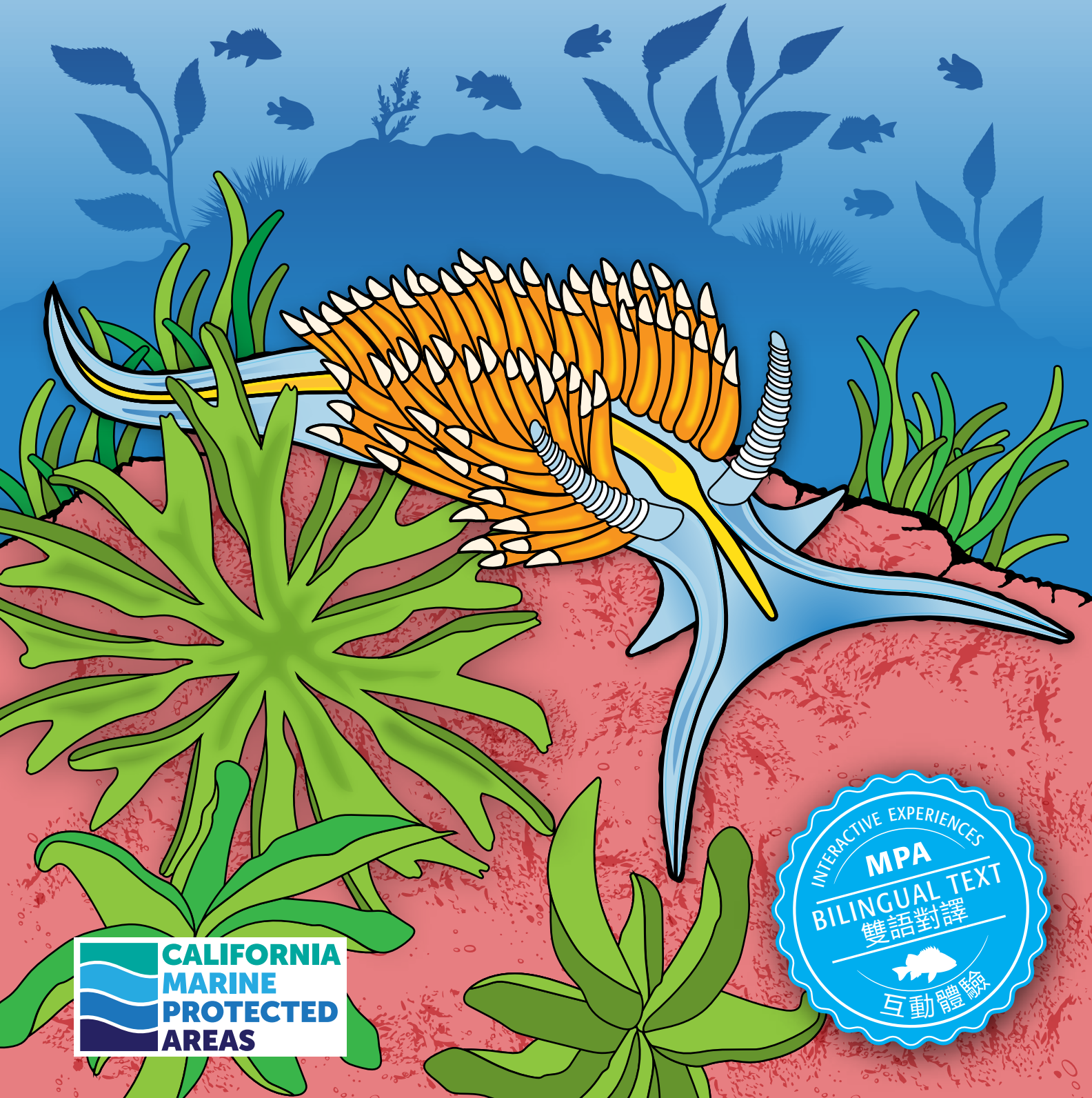
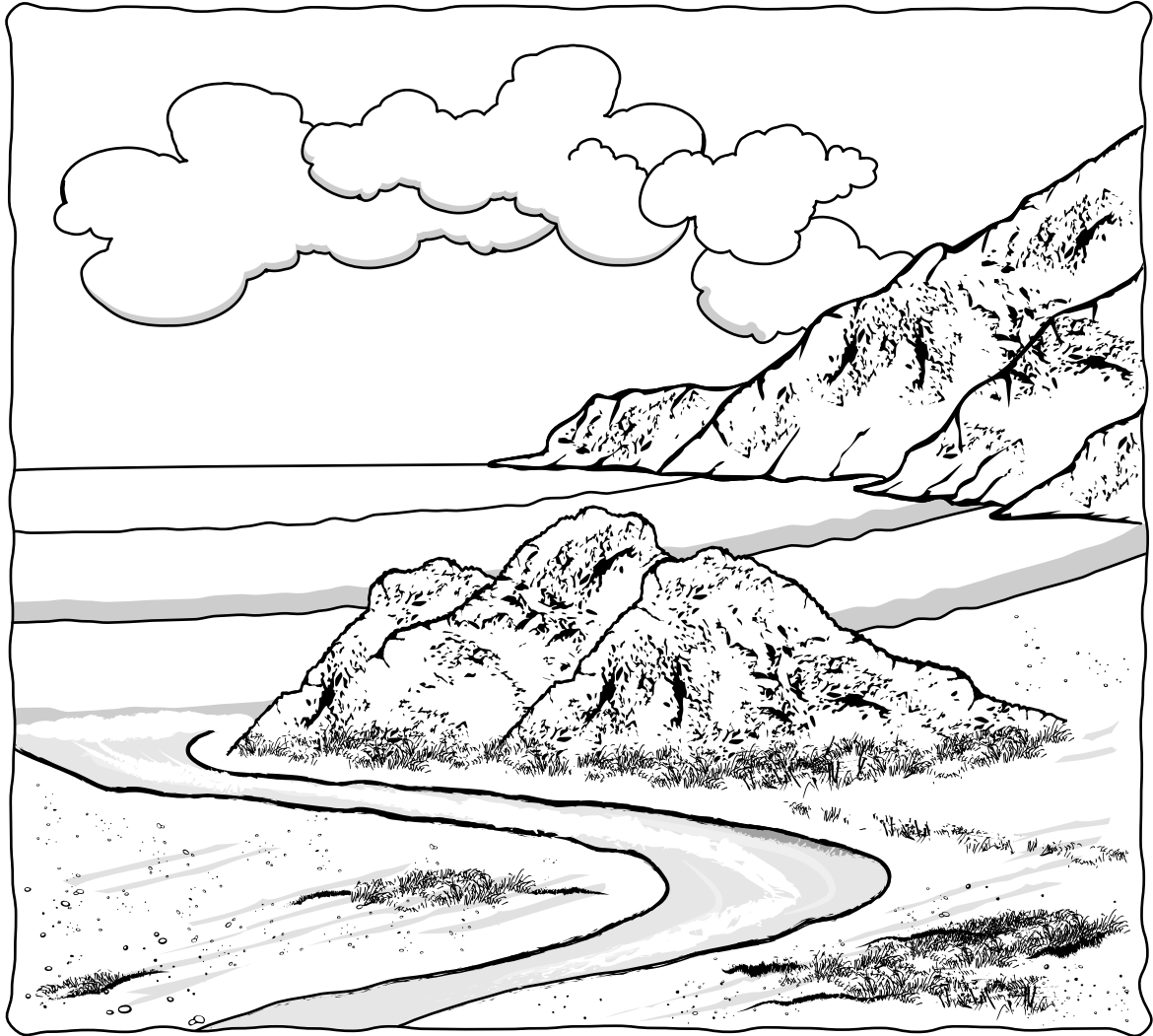


MARINE PROTECTED AREA COLORING BOOK

海洋保護區 | 塗色本



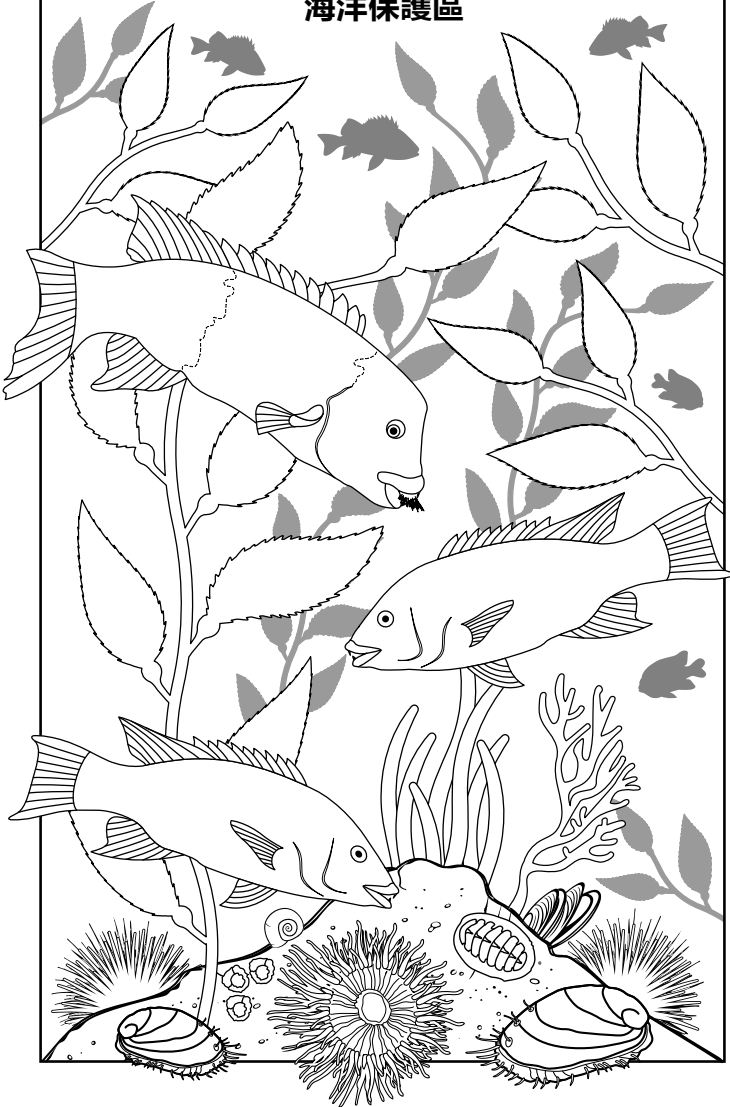


Since time immemorial tribal people across the state have had an ongoing relationship with the ocean. They continue to manage, depend on, and have a sacred relationship with ocean and marine resources today. With differences in language and culture, the tribes within and beyond California are all unique and recognized as sovereign nations. A long history of caring for the coast allows tribes to contribute not only important traditional ecological knowledge but also contemporary Western science to the ongoing management of California's marine protected areas (MPAs), ocean, and coast.

自遠古以來，全加州的部落族民一直跟海洋保持著密切的關係。至今，他們繼續操持、依賴以及珍惜他們與海洋和海洋資源的神聖關係。由於語言和文化的差異，加州內外的部落都是獨一無二，獲公認的主權國家。部落照顧海岸的悠久歷史令他們不僅可以提供重要的傳統生態知識，還可貢獻給當代西方科學，持續管理加州海洋保護區 (MPAs)、海洋和海岸的經驗。

Marine Protected Area

海洋保護區



Unprotected Area

未保護區



Benefits of Marine Protected Areas (MPAs)

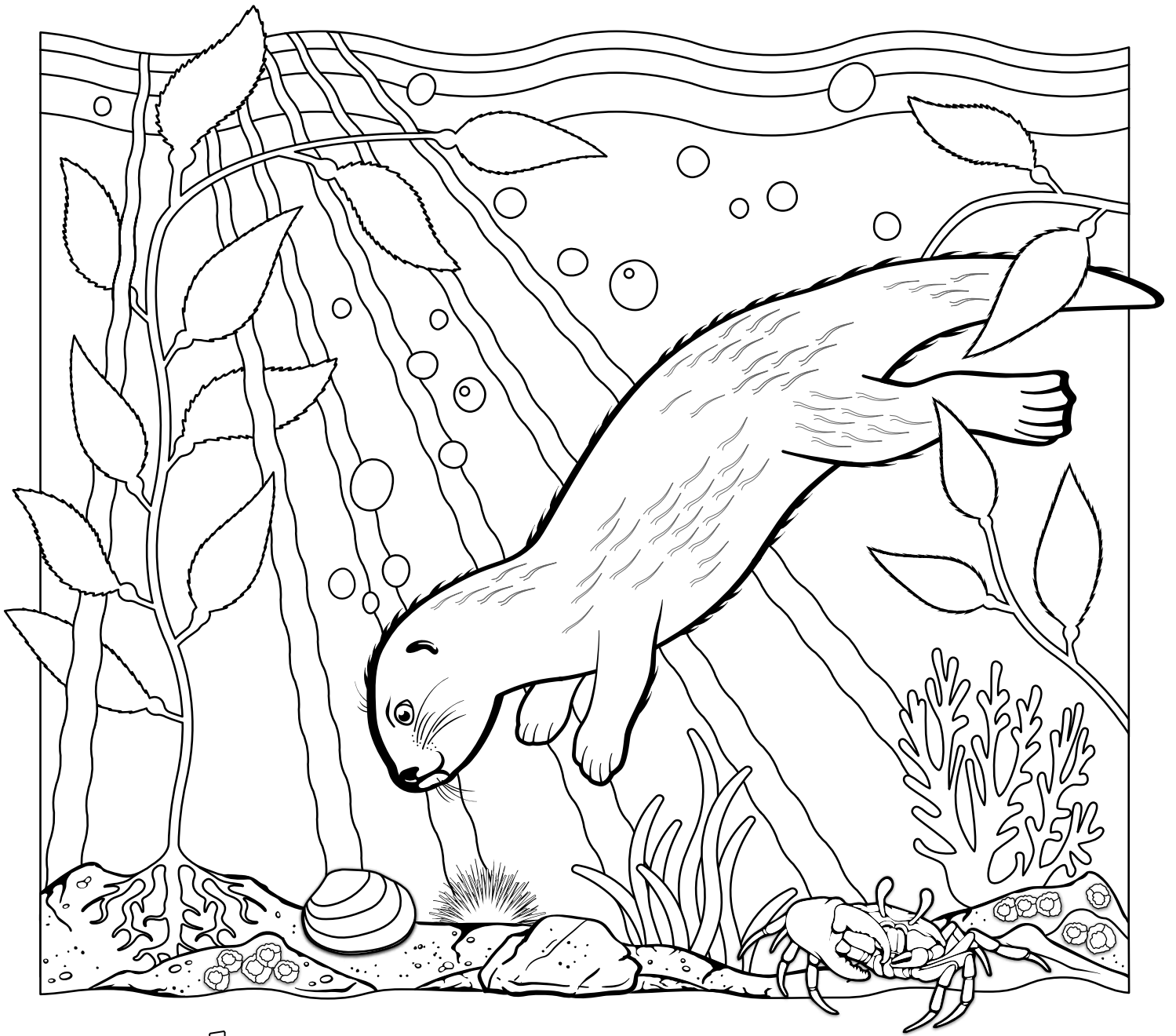
MPAs are great tools for ocean conservation. They can help rebuild over-fished populations and protect the diversity and abundance of ocean ecosystems. They are also amazing places to explore! MPAs can help the whole ecosystem.

Sheephead fish have crushing teeth suited for eating urchins. When they are left in the water instead of being removed through fishing, they keep urchin numbers down which, in turn, helps kelp forests thrive. Compare the two pictures above. Which one looks healthier?

海洋保護區的好處 (MPAs)

MPAs 是保護海洋的重要工具。它們可以幫助重建被過度捕撈的種群，以及保護海洋生態系統的多樣性和豐富性。它們也是令人驚嘆的探索之地! MPAs 可以幫助整個生態系統。

羊鯛有適合咬碎吃下海膽的牙齒。讓它們活在水中而不是被捕走會降低海膽的數量，這反過來會幫助海藻林茁壯成長。比較上面兩張圖。哪個看起來更健康?



Southern sea otter (*Enhydra lutris nereis*)

Champion eaters! Sea otters have to eat about 25% of their body weight in food every day to maintain their high metabolism. For example, a 60-pound otter has to eat about 15 pounds of food, consisting of crabs, clams, and sea urchins, every day! Without sea otters, the number of sea urchins can explode! A large number of sea urchins can eat all the kelp and form urchin barrens for miles around. You can view sea otters at the Elkhorn Slough and Point Lobos MPAs. (This species is federally listed as threatened.)

南方海獺 (*Enhydra lutris nereis*)

冠軍競食者!為了維持高新陳代謝,海獺每天必須吃相當於自己體重25%的食物。例如,一隻60磅的海獺每天要吃掉包括螃蟹、蛤蜊和海膽等大約15磅的食物!沒有海獺,海膽的數量會爆脹!大量的海膽會吃掉所有的海藻,並形成方圓數英里的海膽貧地。您可以在Elkhorn Slough和Point Lobos MPAs觀賞海獺。(該物種被聯邦政府列為受威脅物種。)

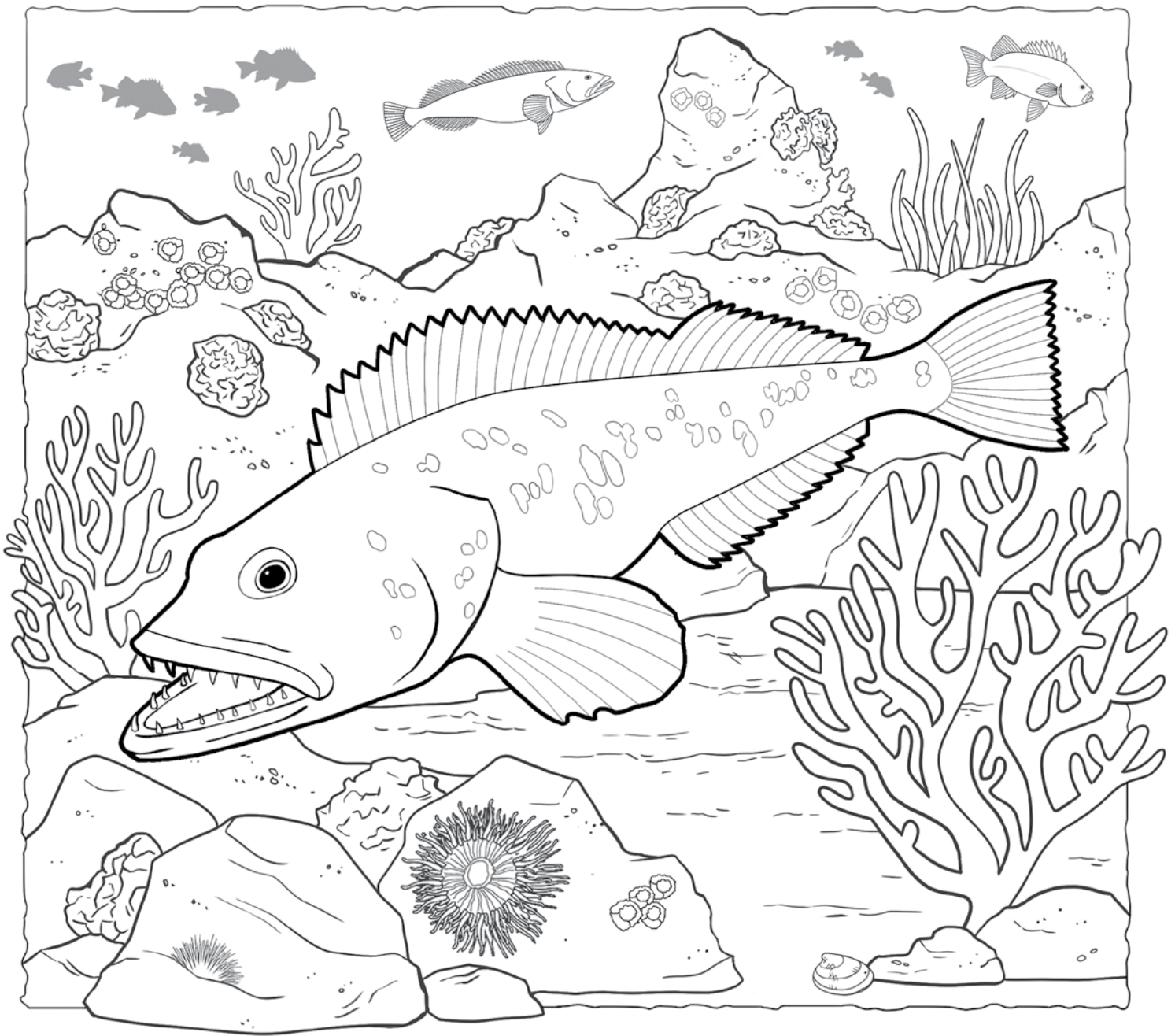


Bull kelp (*Nereocystis leutkeana*)

Bull kelp often grow in dense stands forming “underwater forests.” They can grow as fast as 5 inches a day and can reach 33 to 118 feet tall. In just 10 days, bull kelp can grow the average height of a 10-year-old child. Can you imagine growing that fast? By the time it’s fully grown, bull kelp can be 7 to 25 kids high! Kelp offers shelter for young fish and many invertebrates.

巨藻 (*Nereocystis leutkeana*)

巨藻通常長在密集的林分中並形成“水下森林”。它們每天可以長高達 5 英寸，而且可以長到 33 到 118 英尺高。短短 10 天內，巨藻就能長得像普通的 10 歲小孩一樣高。你能想像長得這麼快嗎？等它完全長大後，巨藻會是 7 到 25 個小孩高！海藻是幼魚和許多無脊椎生物的庇護所。



Lingcod (*Ophiodon elongatus*)

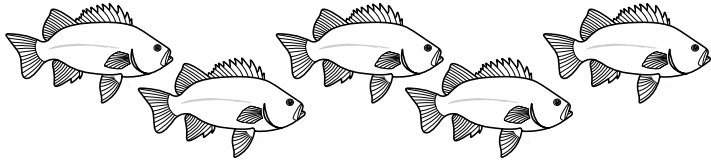
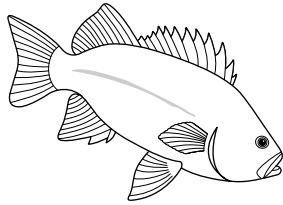
To see your coloring come to life and learn more about the lingcod, download the free Quiver app and scan this page with your smart phone or tablet!

長蛇齒單線魚 (*Ophiodon elongatus*)

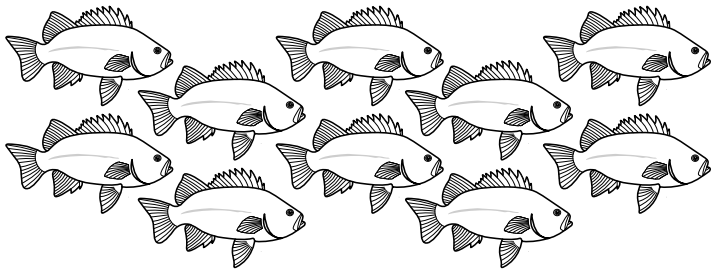
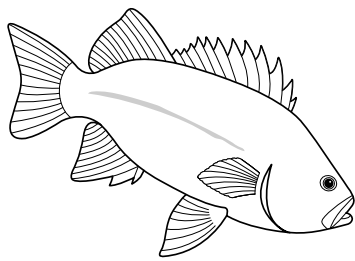
想看到你的色彩塗得更生動以及了解更多有關長蛇齒單線魚的消息，請下載免費的 Quiver 應用程式並用你的智能手機或平板電腦掃描本頁！



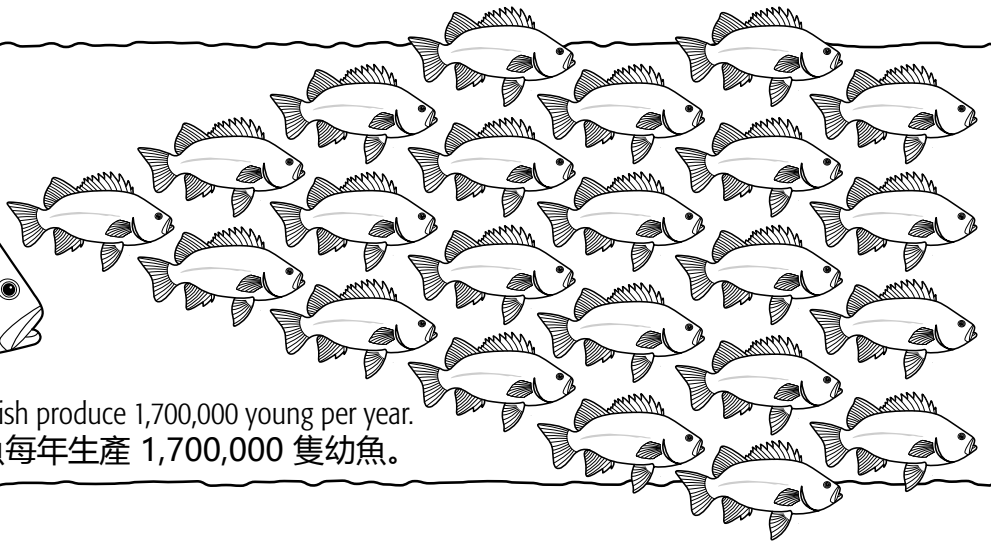
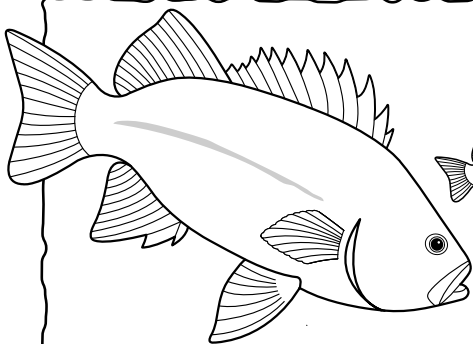
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Small (15 inches) Vermilion rockfish produce 150,000 young per year.
小型 (15 英寸) 朱紅石斑魚每年生產 150,000 隻幼魚。



Medium (20 inches) Vermilion rockfish produce 700,000 young per year.
中型 (20 英寸) 朱紅石斑魚每年生產 700,000 隻幼魚。



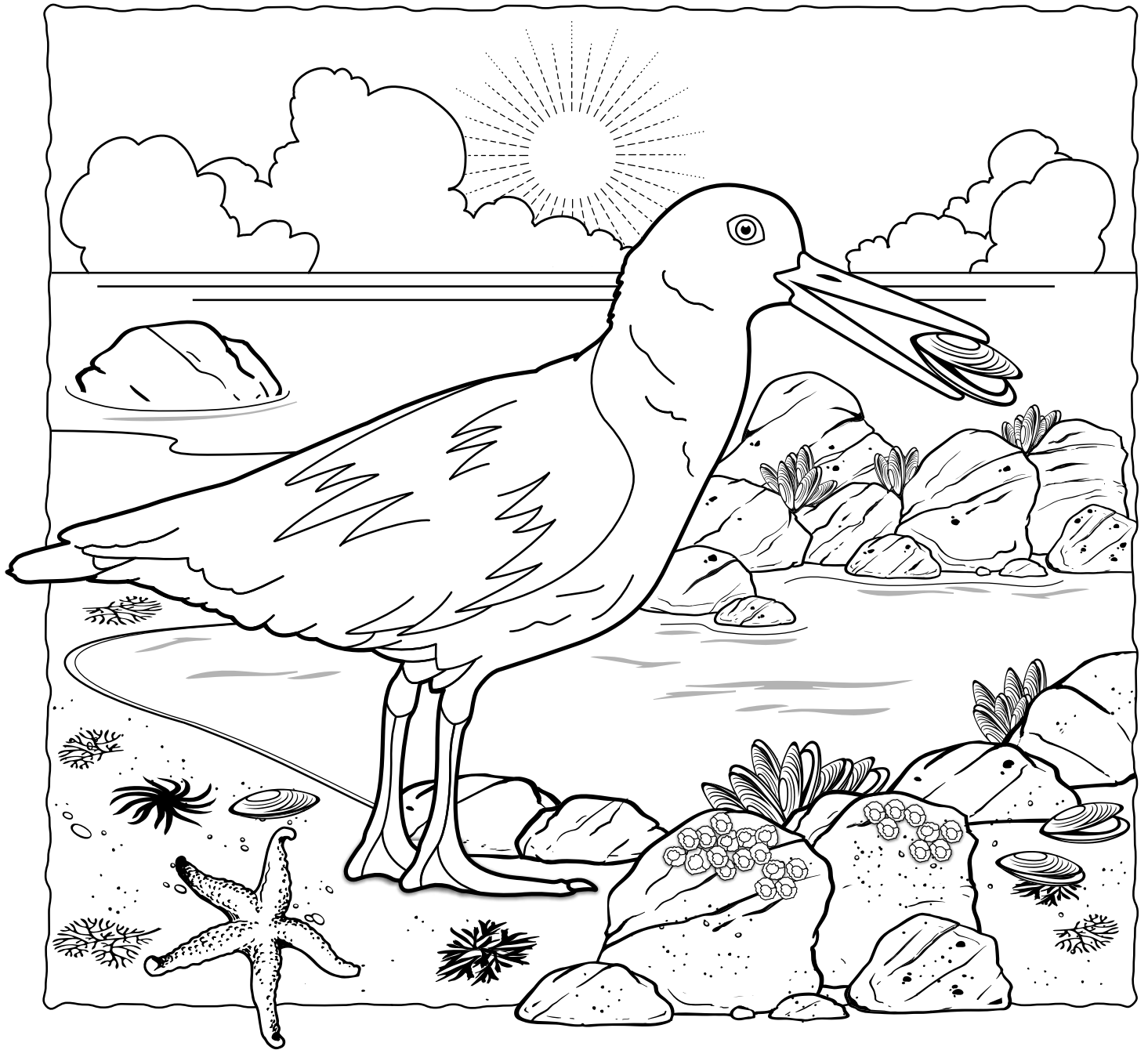
Large (24 inches) Vermilion rockfish produce 1,700,000 young per year.
大型 (24 英寸) 朱紅石斑魚每年生產 1,700,000 隻幼魚。

Big Old Fertile Female Fish (BOFFF)

Marine protected areas can allow the fish that live in them to grow larger. These big old fertile female fish (BOFFF) produce more young per year than smaller fish. So, if you let them grow big enough their populations will increase dramatically.

大老肥母魚 (BOFFF)

海洋保護區可以讓在裡面生活的魚長得更大。這些大老肥母魚 (BOFFF) 每年比小魚生產更多的幼魚。所以，如果你讓它們長得足夠大，它們的數量就會急劇增加。



Black oystercatcher (*Haematopus bachmani*)

Did you know that female oystercatchers lay two to three eggs among pebbles in shallow, rocky holes or in a hollow on the beach above the high tide? They don't like being disturbed, so please be careful. Stay back at least the length of one school bus. You will know if you are disturbing them if they take flight with loud, ringing whistles. Don't forget to color their bills bright red and their eyes yellow.

黑蠣鷸 (*Haematopus bachmani*)

你知道雌性黑蠣鷸會在淺淺的石坑或海灘漲潮上方凹洞裡的石堆產下兩到三個卵嗎？它們不喜歡被打擾，所以請小心。至少保持一輛校車的距離。你如果打擾到，牠們就會吹著響亮的口哨起飛。不要忘了喔，把牠們的嘴塗成鮮紅色，以及眼睛塗成黃色。

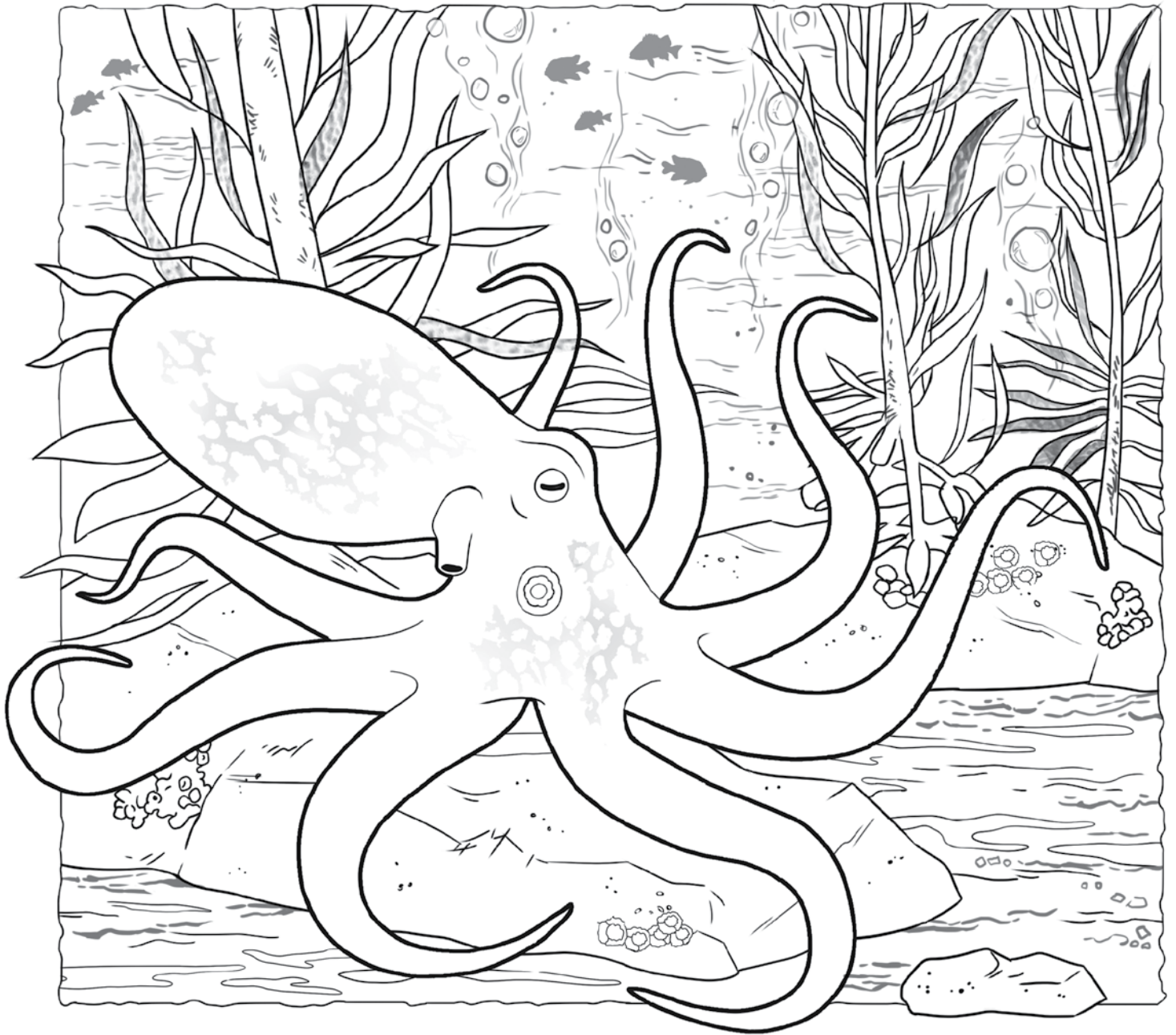


Bat star (*Patiria miniata*)

Bat stars live in tidepools along our entire coast, and come in shades of red, orange, yellow, brown, green and purple. When a bat star finds food it extends its stomach over the prey, adds its digestive juices and then slurps it up. Yum! As scavengers, they play an important role by eating dead animals and algae from the seafloor. Bat stars can be found in almost all of California's marine protected areas.

蝠海星 (*Patiria miniata*)

蝠海星在我們整個海岸的潮池裡生活，而是紅色、橙色、黃色、棕色、綠色或紫色。找到食物的蝠海星會敞開出胃部將獵物蓋上，分泌消化液，然後吞食它。好吃！它們通過吃掉死在海底的動物和藻類發揮重要的清道夫作用。你可以在幾乎所有的加州海洋保護區找到蝠海星。



California two-spot octopus (*Octopus bimaculoides*)

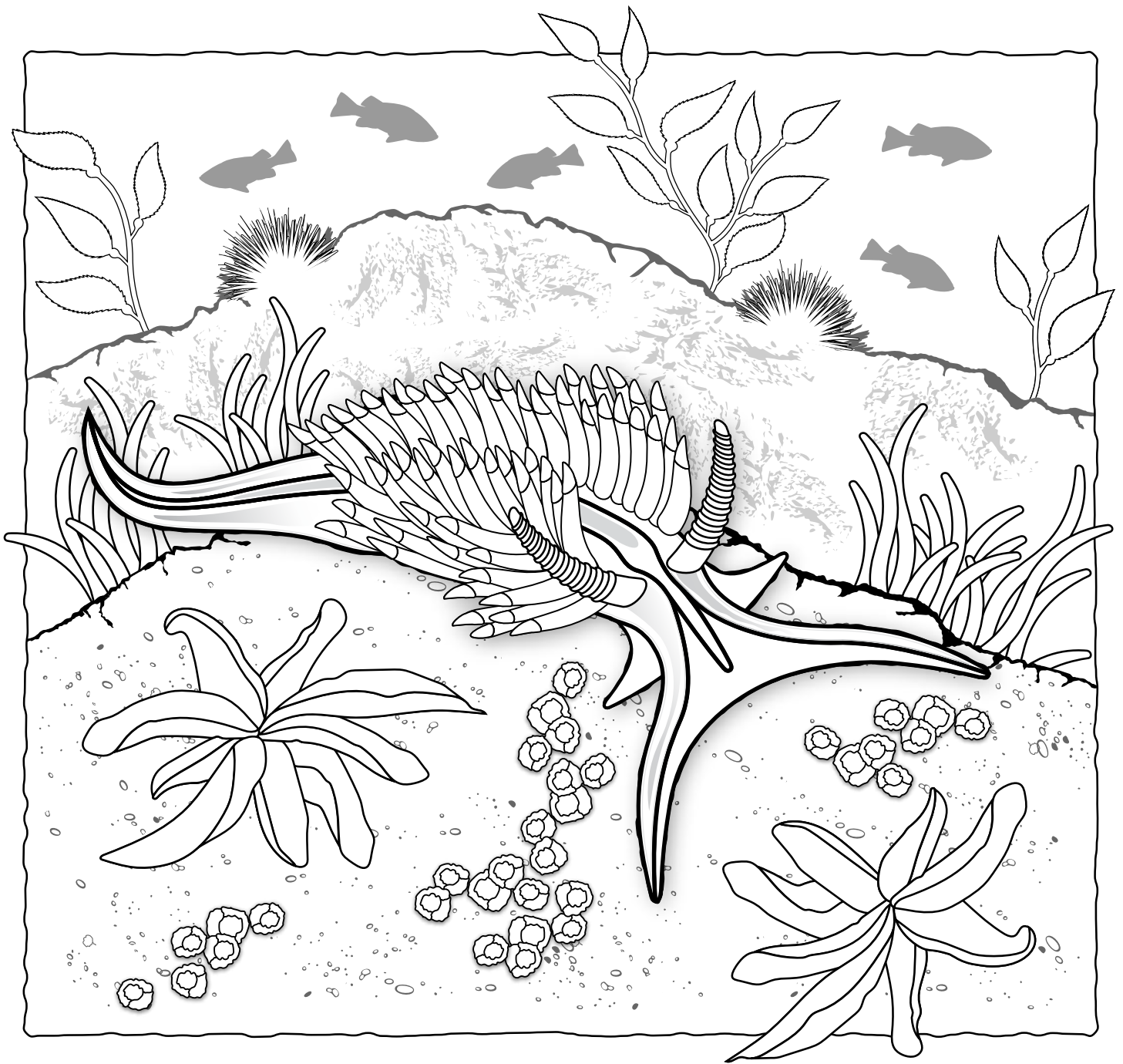
To see your coloring come to life and learn more about the California two-spot octopus, download the free Quiver app and scan this page with your smart phone or tablet!

加州雙斑蛸 (*Octopus bimaculoides*)

想看到你的色彩塗得更生動以及了解更多有關加州雙斑蛸的消息，請下載免費的 Quiver 應用程式並用你的智能手機或平板電腦掃描本頁！



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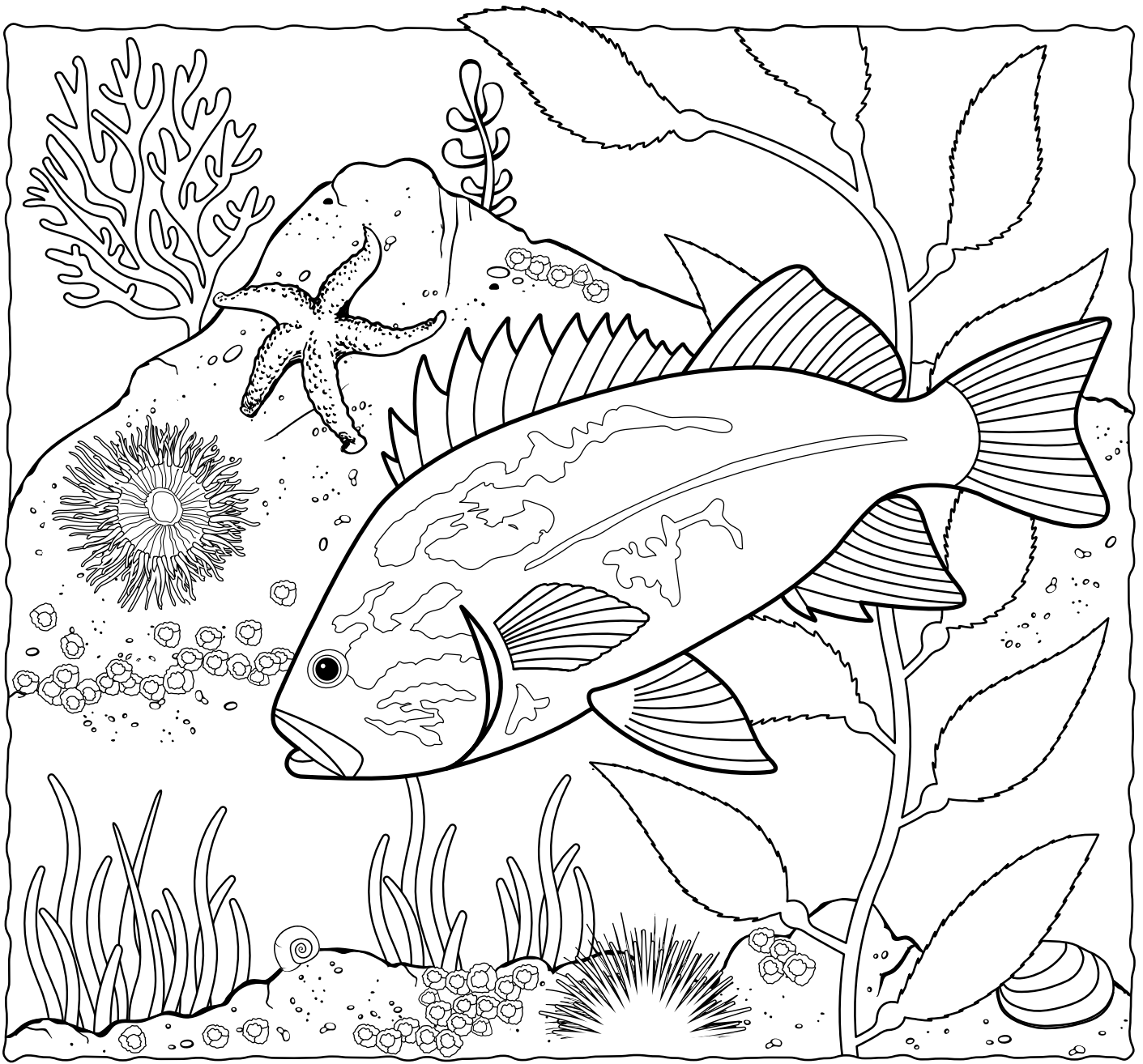


Nudibranch (*Hermisenda crassicornis*)

Where are these colorful sea slugs found in the United States? They are found from Kodiak Island, Alaska to Central California. The word nudibranch means “naked gills” since they are shell-less. This species is easy to recognize with an orange stripe along the head area and the white stripes along the body. These glamorous colored sea slugs thrive in Montara and Point Lobos State Marine Reserves, where they are frequently found.

裸鰓目 (*Hermisenda crassicornis*)

這些五顏六色的海蛞蝓可以在美國哪裡找得到？它們從阿拉斯加的 Kodiak Island 分佈到加州中部。“Nudibranch” 的意思是「裸鰓」，因為它們沒有殼。這個物種很容易識別。它們頭部有橙色條紋，身體有白色條紋。這些迷人的彩色海蛞蝓在 Montara 和 Point Lobos 州立海洋保護區茁壯成長，並經常在那裡看得到。

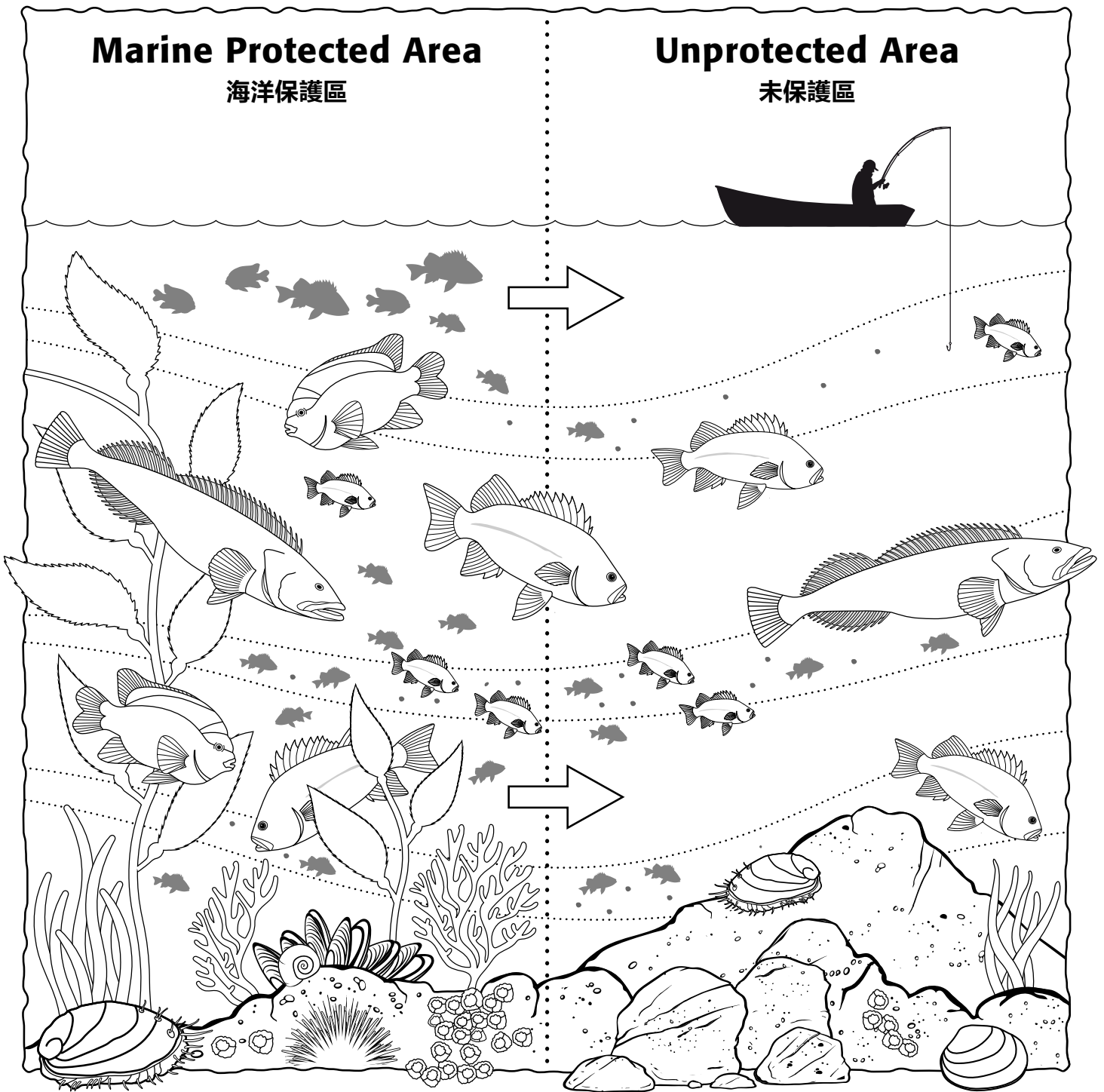


Vermilion rockfish (*Sebastes miniatus*)

The vermilion rockfish live in deeper water, up to 1000 feet. They have bright red bodies with black and gray on their back and sides and can live to be 60 years old! Did you know that a fish could live that long? Animals can grow bigger in marine protected areas than in unprotected areas. Having bigger, older fish is important because they can have many more babies than the smaller ones. More babies mean more fish!

朱红平鮋 (*Sebastes miniatus*)

朱红平鮋在更深，可達 1000 英尺的水中生活。它們有鮮紅色的身體，黑色及灰色的背部和側面，而且還能活到 60 歲！你知道一條魚可以活那麼久嗎？在海洋保護區的動物比在非保護區的長得更大。有更大、更老的魚很重要，因為它們會比較小的魚生更多的魚寶寶。有更多的魚寶寶會有更多的魚！

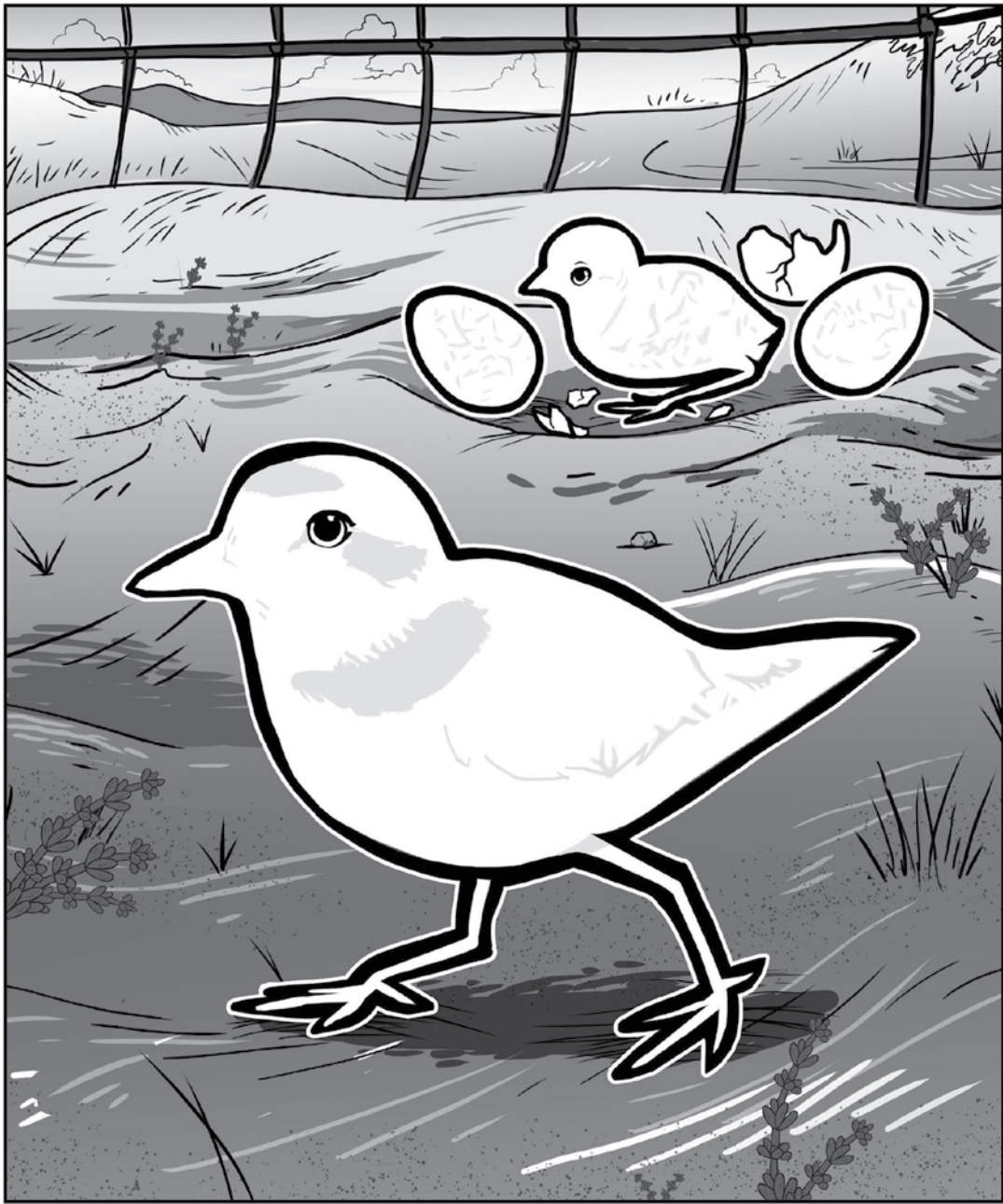


Spillover Effect of Marine Protected Areas

When you protect habitats in a marine protected area (MPA), animals like fish and abalone can grow big and multiply. Over time, their babies may leave the MPA behind and spillover into other areas outside of MPAs, making the entire ecosystem healthier.

海洋保護區的外溢效應

當你保護海洋保護區 (MPA) 裡的棲息地，魚類和鮑魚等生物會生長和繁殖。隨著時間，它們的魚寶寶可能會離開海洋保護區而且去到區外的地方，由此把整個生態系統變得更健全。



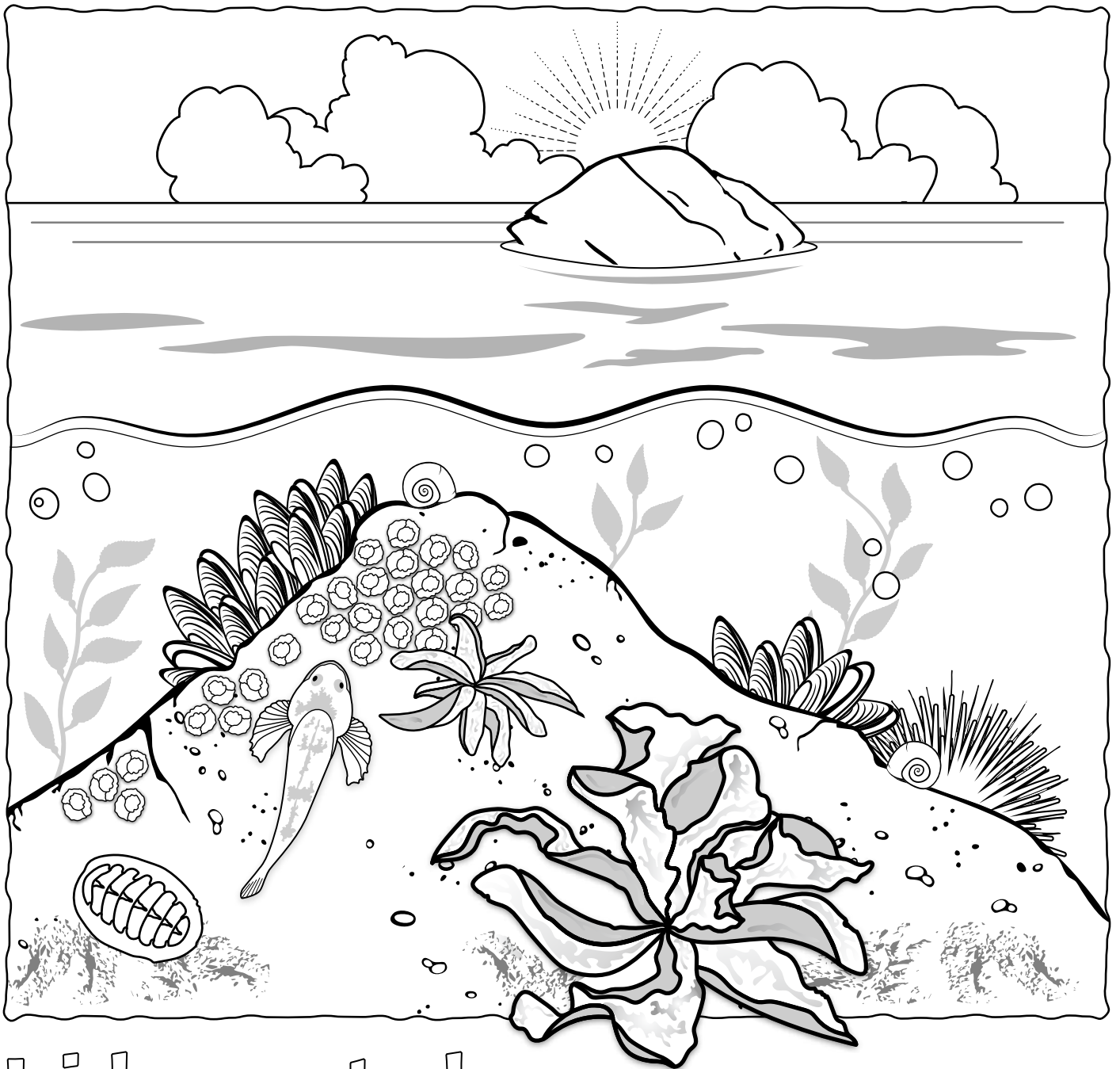
Snowy plover (*Charadrius nivosus*)

To see your coloring come to life and learn more about the Snowy plover, download the free Quiver app and scan this page with your smart phone or tablet!

雪鴉 (*Charadrius nivosus*)

想看到你的色彩塗得更生動以及了解更多有關雪鴉的消息，請下載免費的 Quiver 應用程序並用你的智能手機或平板電腦掃描本頁！





Iridescent algae (*Mazzaella flaccida/splendens*)

These algae come in a variety of colors including dark-purple, brown, green, bluish-purple and may even appear black. So be creative when you color your algae! They appear iridescent, like a shiny rainbow, when wet. They are one source for carrageenan, a substance commonly used to thicken products like ice cream and toothpaste. These algae are found in many California marine protected areas.

虹彩藻 (*Mazzaella flaccida/splendens*)

這些藻有多種顏色，包括深紫色、棕色、綠色、藍紫色，甚至可能呈現黑色。所以當你給這些藻上色時，要有創意！它們濕了後會發亮，像閃亮的彩虹。它們是角叉菜膠的一種來源。角叉菜膠是一種常用於增稠冰淇淋和牙膏等產品的物質。這些藻類在許多加州海洋保護區裡都找得到。



Marine Protected Area | 海洋保護區

The animals and plants pictured here are ones likely to benefit from California's marine protected areas. Those benefits come from the fact that the MPAs safeguard important parts of their habitat, including food, shelter, and places to raise their young.

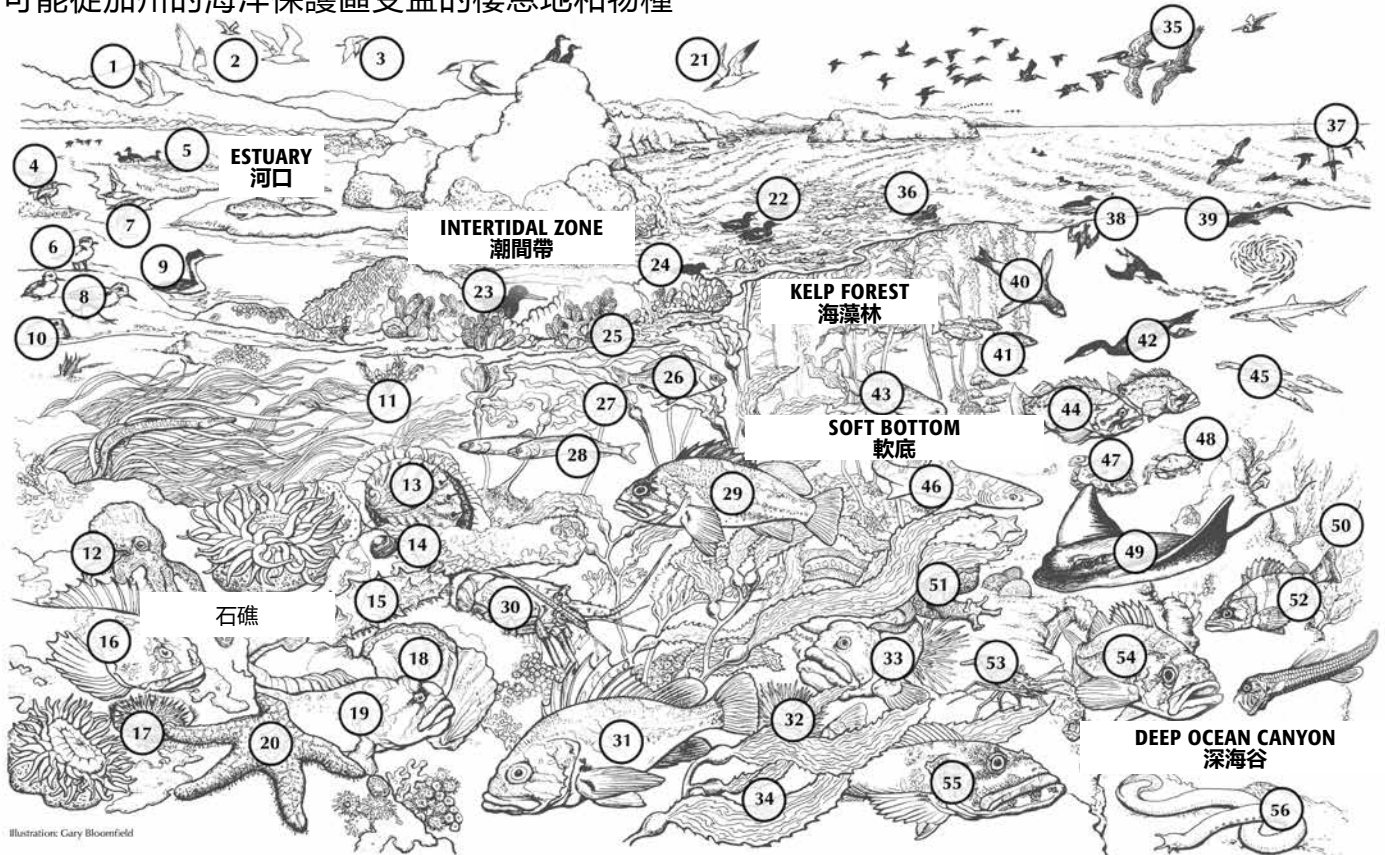
加州的海洋保護區可能惠及圖中的動植物。這些好處源自海洋保護區保護它們棲息地的重要因素，包括食物、住所和撫養寶寶的地方。



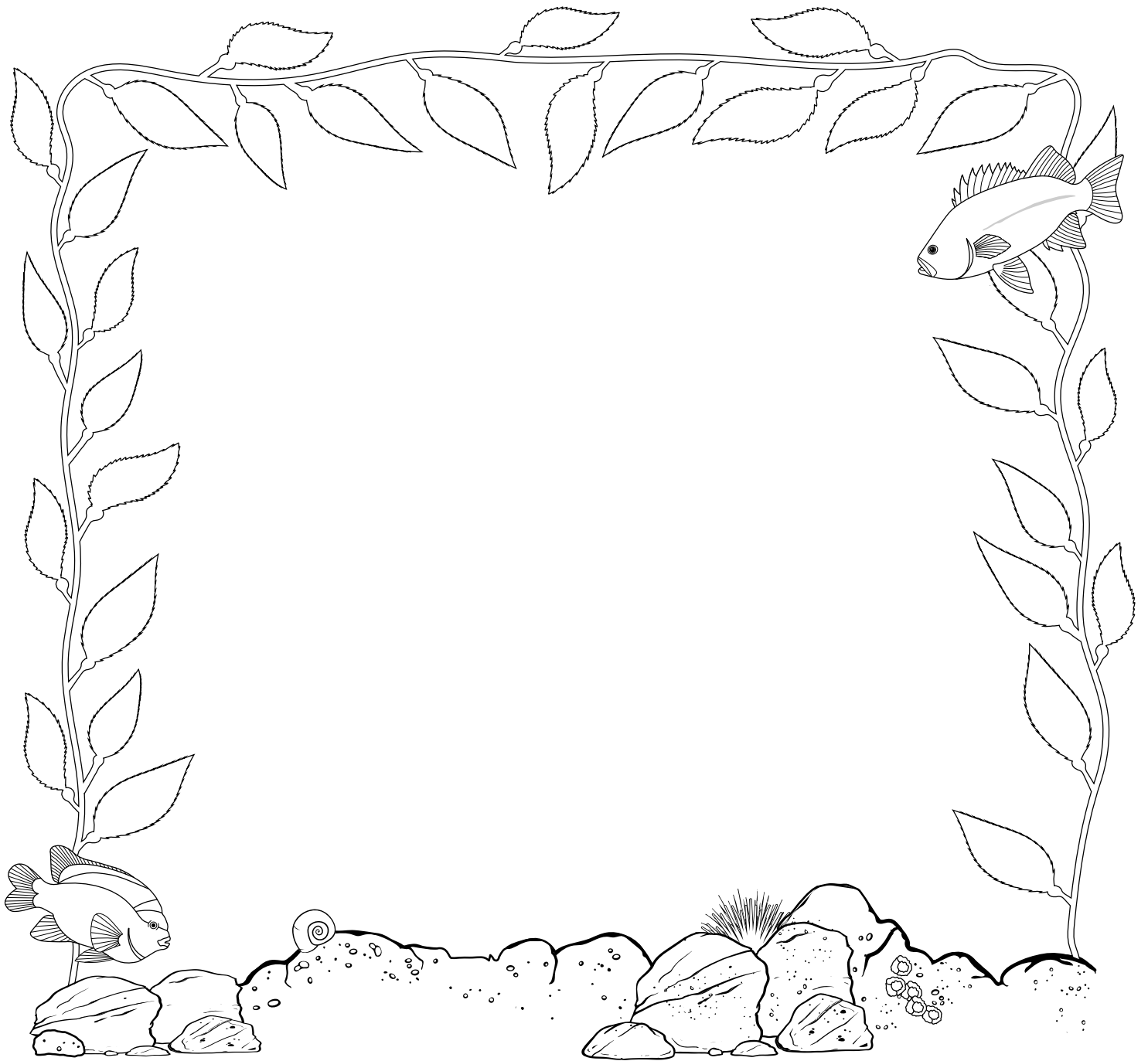
Habitats and Species Likely to Benefit From California's Marine Protected Areas



可能從加州的海洋保護區受益的棲息地和物種



- | | | | |
|---|--|---|--|
| 1. California Gull
<i>Larus californicus</i> | 15. California Sea Cucumber
<i>Apostichopus californicus</i> | 29. Copper Rockfish
<i>Sebastes caurinus</i> | 43. Harbor Seal
<i>Phoca vitulina</i> |
| 2. Western Gull
<i>Larus occidentalis</i> | 16. Cabezon
<i>Scorpaenichthys marmoratus</i> | 30. California Spiny Lobster
<i>Panulirus interruptus</i> | 44. Blue Rockfish
<i>Sebastes mystinus</i> |
| 3. Heermann's Gull
<i>Larus heermanni</i> | 17. Purple Urchin
<i>Strongylocentrotus purpuratus</i> | 31. Black & Yellow Rockfish
<i>Sebastes chrysomelas</i> | 45. Market Squid
<i>Doryteuthis (Amerigo) opalescens</i> |
| 4. Long-billed Curlew
<i>Numenius americanus</i> | 18. Rock Scallop
<i>Crassadoma gigantea</i> | 32. Red Urchin
<i>Mesocentrotus franciscanus</i> | 46. Leopard Shark
<i>Triakis semifasciata</i> |
| 5. Brant
<i>Branta bernicla</i> | 19. Monkeyface Prickleback
<i>Cebidichthys violaceus</i> | 33. Wolf-eel
<i>Anarrhichthys ocellatus</i> | 47. C-O Turbot
<i>Pleuronichthys coenosus</i> |
| 6. Snowy Plover
<i>Charadrius nivosus</i> | 20. Ochre Star
<i>Pisaster ochraceus</i> | 34. Giant Kelp
<i>Macrocystis pyrifera</i> | 48. Dungeness Crab
<i>Metacarcinus magister</i> |
| 7. Dunlin
<i>Calidris alpina</i> | 21. Caspian Tern
<i>Hydroprogne caspia</i> | 35. Brown Pelican
<i>Pelecanus occidentalis</i> | 49. Bat Ray
<i>Myliobatis californica</i> |
| 8. Sanderling
<i>Calidris alba</i> | 22. Pigeon Guillemot
<i>Cephus columba</i> | 36. Rhinoceros Auklet
<i>Cerorhinca monocerata</i> | 50. Purple Gorgonian
<i>Eugorgia rubens</i> |
| 9. Western Grebe
<i>Aechmophorus occidentalis</i> | 23. Black Oystercatcher
<i>Haematopus bachmani</i> | 37. Sooty Shearwater
<i>Ardenna grisea</i> | 51. California Sea Hare
<i>Aplysia californica</i> |
| 10. Pacific Littleneck Clam
<i>Leukoma staminea</i> | 24. Black Turnstone
<i>Arenaria melanocephala</i> | 38. Common Murre
<i>Uria aalge</i> | 52. Flag Rockfish
<i>Sebastes rubrivinctus</i> |
| 11. Gooseneck Barnacle
<i>Pollicipes polymerus</i> | 25. California Mussel
<i>Mytilus californianus</i> | 39. Harbor Porpoise
<i>Phocoena phocoena</i> | 53. Spot Prawn
<i>Pandalus platyceros</i> |
| 12. Red Octopus
<i>Octopus rubescens</i> | 26. Shiner Surfperch
<i>Cymatogaster aggregata</i> | 40. California Sea Lion
<i>Zalophus californianus</i> | 54. Vermilion Rockfish
<i>Sebastes miniatus</i> |
| 13. Red Abalone
<i>Haliotis rufescens</i> | 27. Bull Kelp
<i>Nereocystis luetkeana</i> | 41. Olive Rockfish
<i>Sebastes serranoides</i> | 55. Lingcod
<i>Ophiodon elongatus</i> |
| 14. Turban Snail
<i>Tegula funebris</i> | 28. Surf Smelt
<i>Hypomesus pretiosus</i> | 42. Brandt's Cormorant
<i>Phalacrocorax penicillatus</i> | 56. Pacific Hagfish
<i>Eptatretus stoutii</i> |



Create Your Own Marine Protected Area

Draw your own MPA. Add your favorite marine animals and remember to show what they eat and where they live. You can also draw yourself playing in your MPA! Continue your ocean journey by exploring the fun activities in the California Coastal Explorer Guide at www.mpacollaborative.org/kids.

創你自己的海洋保護區

畫出你自己的海洋保護區。添加你最喜歡的海洋動物，記得展示它們吃什麼以及住在哪裡。你也可以畫你在你的海洋保護區裡玩耍！在 www.mpacollaborative.org/kids 上探索《加州海岸探險指南》中的有趣活動，繼續你的海洋之旅。

Marine Protected Areas 海洋保護區

Marine Protected Areas

The California Marine Protected Area (MPA) Network was established to help conserve marine life and restore the integrity of marine ecosystems. There are several key habitat-types found within California's MPAs including estuaries, intertidal zones, rocky reefs, kelp forests, soft ocean bottoms, and submarine canyons. The MPAs in California comprise the largest ecologically-connected network of its kind in the world.

海洋保護區

加州海洋保護區 (MPA) 網路旨在幫助保護海洋生物和恢復海洋生態系統的完整性。加州海洋的保護區有數種主要的棲息地型，包括河口、潮間帶、岩礁、海藻林、海底軟層和海底谷。加州的海洋保護區是其類世界最大的生態連接網絡。

This coloring book and the included Quiver augmented reality experiences were funded by a grant from the California Ocean Protection Council and Coastal Quest. Morro Bay National Estuary Program was the project's fiscal agent.

這冊塗色本和增高現實體驗的隨附 Quiver 是由加利福尼亞海洋保護委員會 (California Ocean Protection Council) 及 Coastal Quest 資助的。Morro Bay National Estuary Program 是本項目的財政代理。

- State Marine Conservation Area
加州海洋保護區
- Federal Marine Conservation Area
聯邦海洋保護區
- State Marine Conservation Area (No take)
加州海洋保護區 (禁捕撈)
- State Marine Reserve
加州海洋保留區
- Federal Marine Reserve
聯邦海洋保留區
- State Marine Recreational Management Area
加州海洋休閒管理區
- State Marine Park
加州海洋公園
- Special Closure
特別關閉區
- National Marine Sanctuary
國家海洋保護區

Color in the county where you're from and circle the marine protected areas you would like to explore!

塗色你住的縣並打圈你想探索的海洋保護區!

