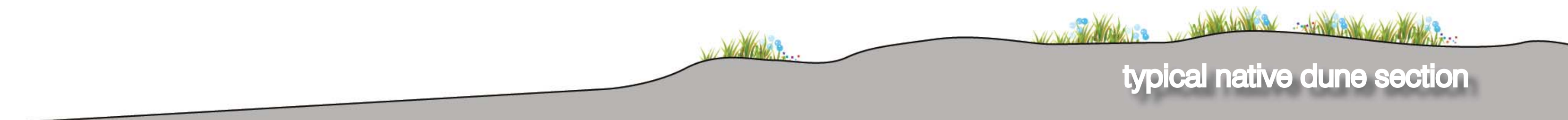


.3 ecology

sand dunes characteristics



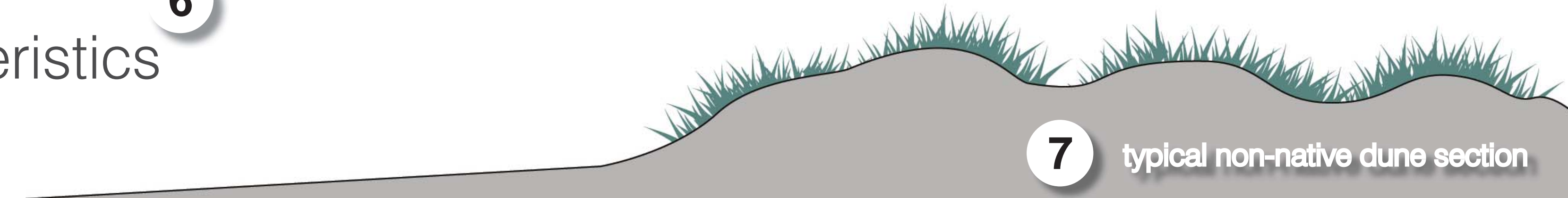
historic native dune | lower profile, more sand transport



typical native dune section



non-native dune | steep and dense

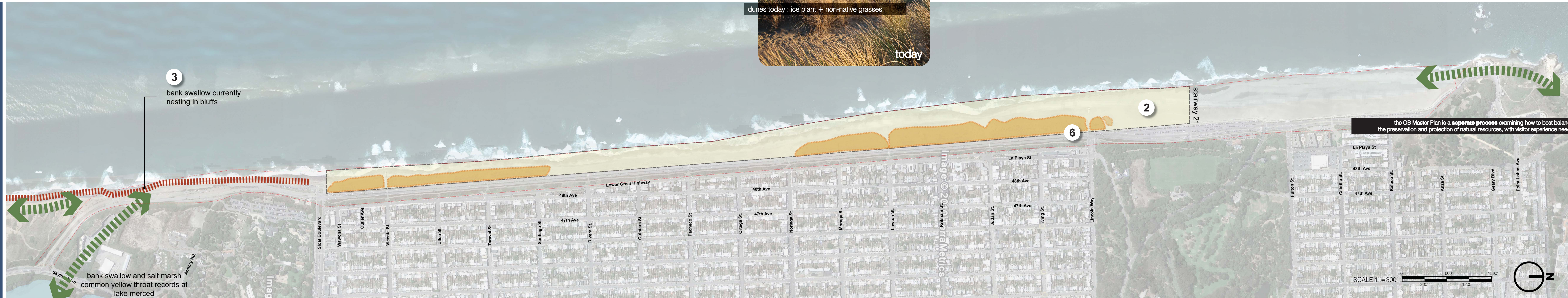


7 typical non-native dune section

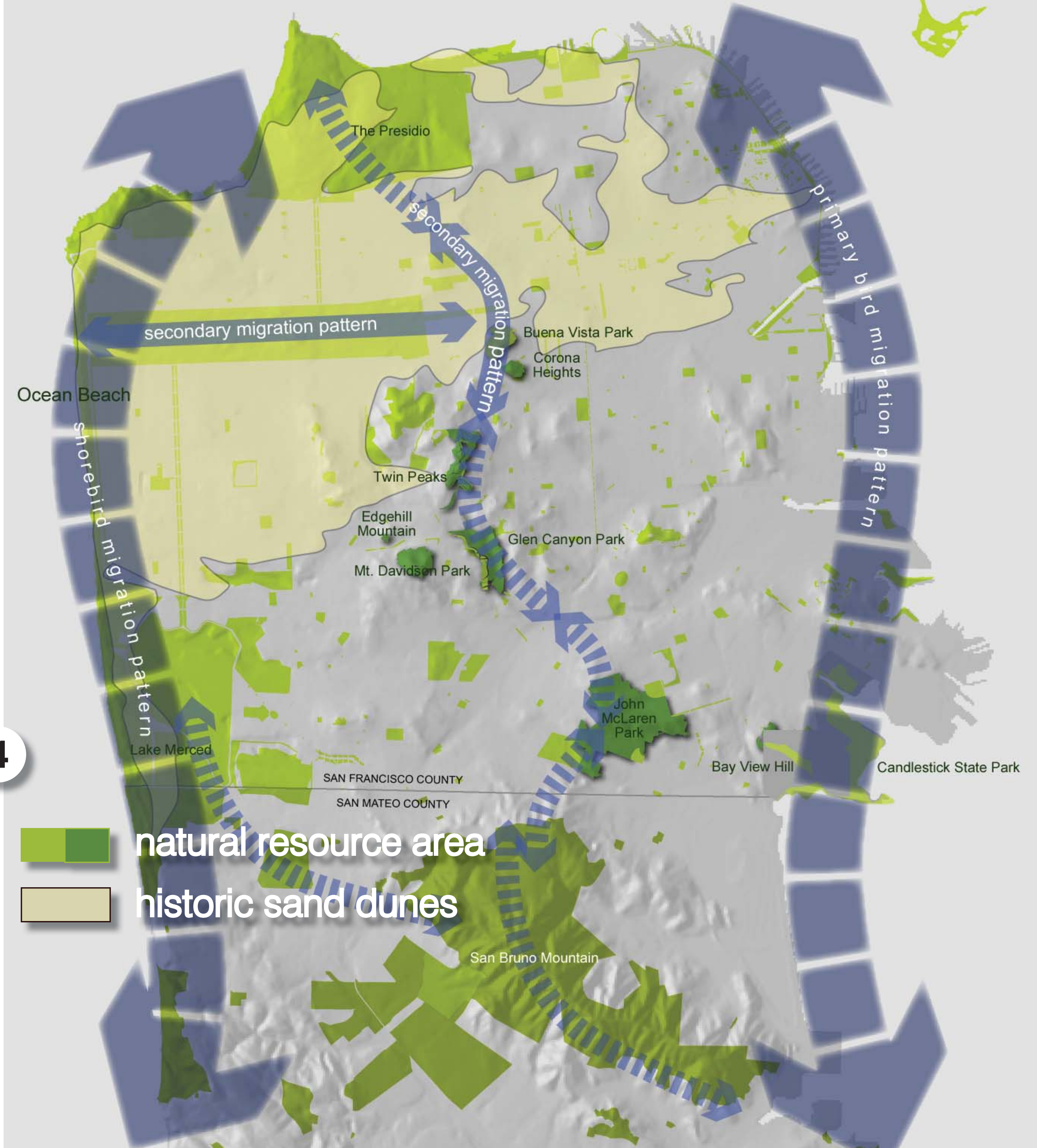
map legend

- project boundary
- dunes
- bluffs
- snowy plover protection
- shorebird corridors

1 vegetation + wildlife



SF's potential wildlife corridors



- natural resource area
- historic sand dunes



native dune vegetation

1906



sunset district encroaching on the native sand dune

1928



dune restoration planting

1990

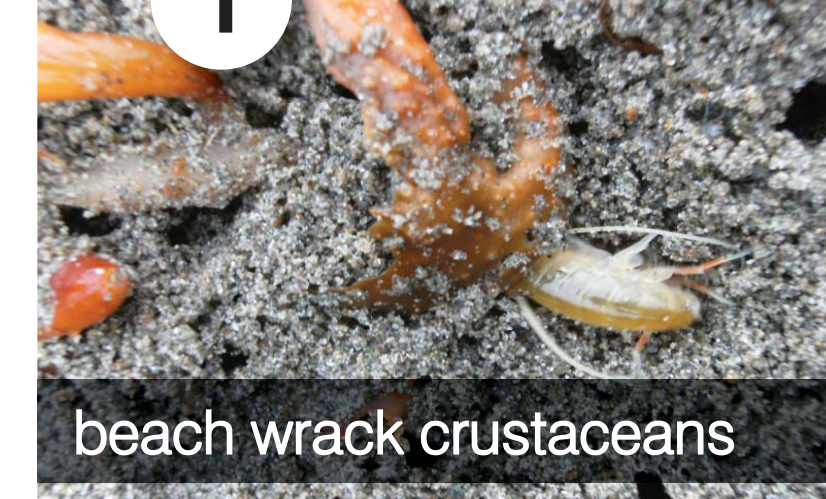


dunes today : ice plant + non-native grasses

today

sand dunes evolution

ocean beach native species



beach wrack crustaceans



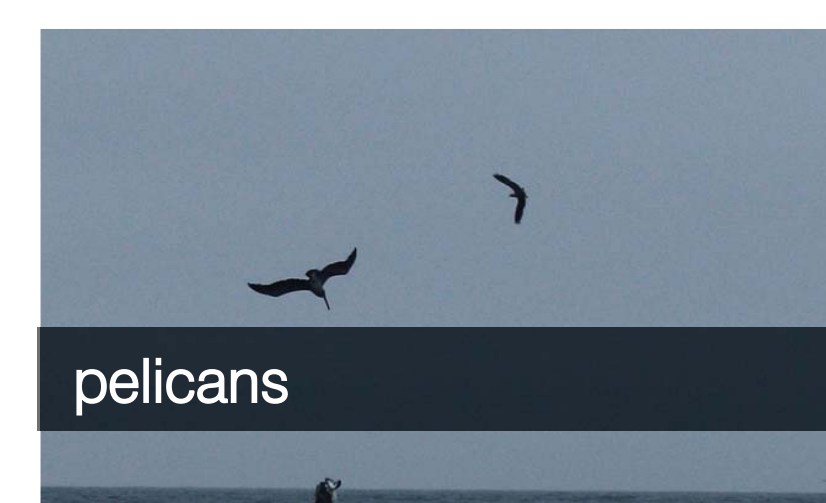
seals



starfish + shellfish



willets



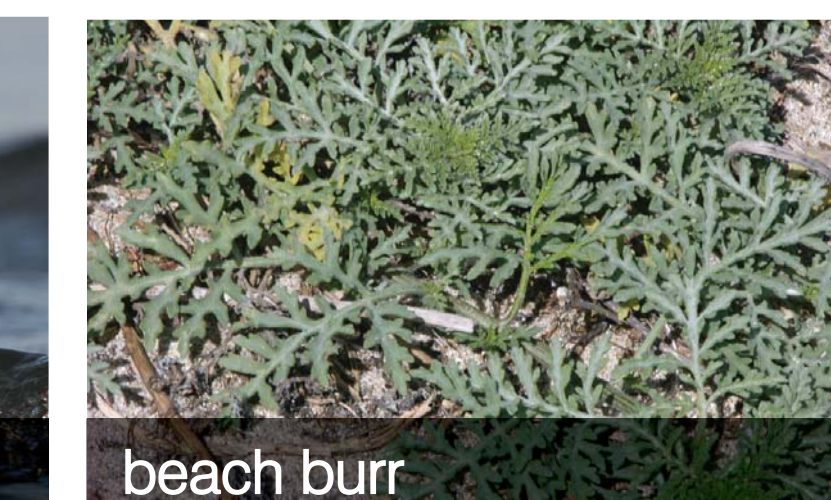
pelicans



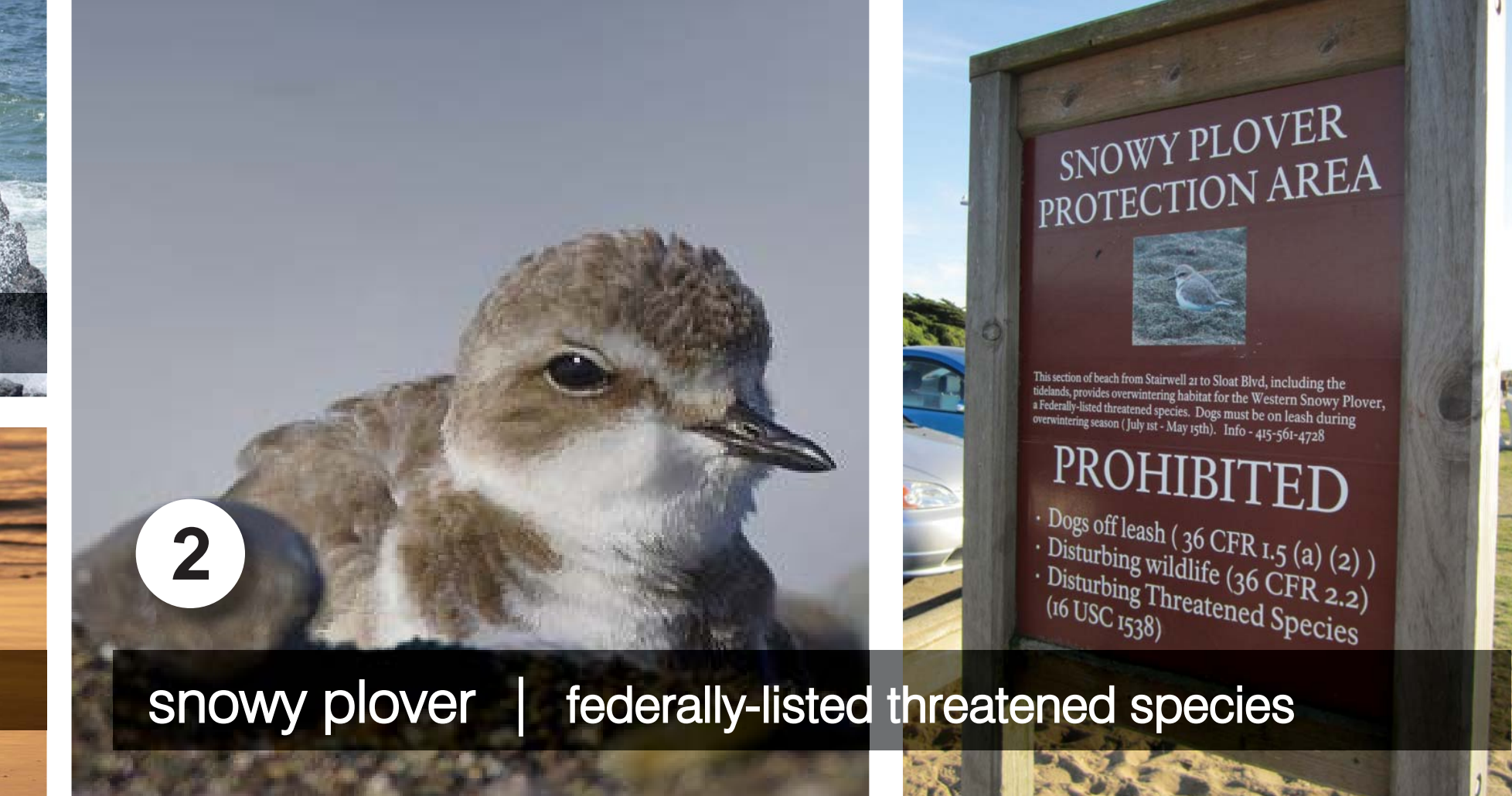
beach lupine



marbled godwin



beach burr



snowy plover | federally-listed threatened species



bank swallow | state-listed threatened species

station 1.3 | ecology



plover threats

- habitat loss and degradation
- human disturbance
- urban development
- exotic beach grass
- expanding predator populations

1 native wildlife at OB

2 western snowy plovers federally threatened species plovers overwinter on OB winter months average about 30 plovers

3 bank swallow state threatened species swallows nest on the cliffs of Fort Funston

4 OB's habitat potential

OB provides very important sandy beach habitat along the pacific flyway for overwintering shorebirds

OB is probably the most important shorebird site in the GGNRA

sanderlings account for 70% of shorebirds on GGNRA coastal beaches

National Park Service has released a Draft Plan/Draft Environmental Impact Statement (Plan/DEIS) for

5 dog management

In GGNRA for a 90-day public comment period, ending on 4/14/11

6 sand dunes

7 all the existing dunes at OB are non-native

dune restoration is possible but challenging and costly

8 1990 restoration efforts have been mostly taken over by non-native species