

- **What is sand?**
- Where does it come from?
- Waves and wave energy
- How global climate change will influence waves and wave transport
- Dune types and formation
- Natural dune communities
- Introduced beachgrass and influence on beach and dunes
- Surf zone and sand dwelling organisms and food web
- **Snowy plover biology**
- Oregon beach law
- Field trip



Western snowy plover (*Charadrius alexandrinus nivosus*)

<http://www.westernsnowyplover.org/>

Western Snowy Plover

TOOLS & RESOURCES FOR RECOVERY

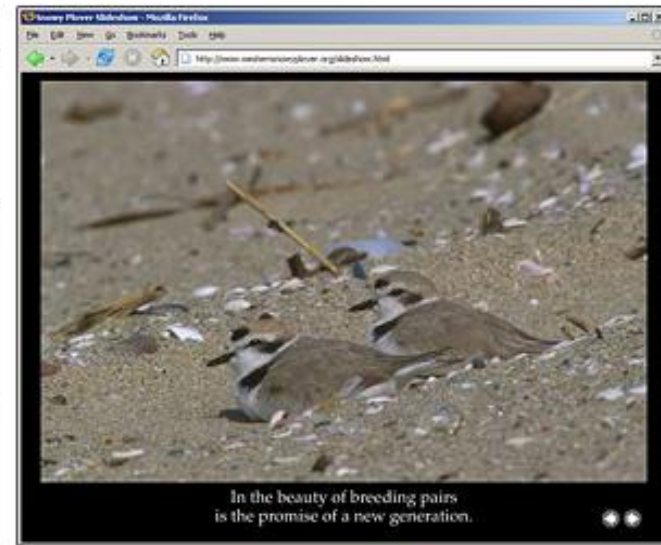
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- ▶ [Not Just Mine Movie](#)
- ▶ [About the Western Snowy Plover](#)
- ▶ [Why save the Plover](#)
- ▶ [The Plover Story: a photo essay](#)
- ▶ [Volunteer to help save the Plover!](#)
- ▶ [Map of Volunteer Programs & Manuals](#)
- ▶ [Coastal Recreation Maps](#)
- ▶ [Recovery Plan](#)
- ▶ [Downloadable Signs](#)

The Plover Story: a photo essay slideshow

This compelling photo essay features beautiful images from local photographers and volunteers of snowy plovers in their habitat, as well as the threats to plover survival. This photo essay is a great tool for helping both kids and adults get familiar with this tiny, rare bird and understand the challenges they face.

This is a Flash-based slideshow with written narration and background music. We hope you enjoy it, and please share it with your friends.



[Start the slideshow](#)

(Requires the Adobe [Flash player](#))



Snowy Plovers were once abundant.





Snowy Plovers were once abundant.





Snowy Plovers were once abundant.





In the beauty of breeding pairs
is the promise of a new generation.





In the beauty of breeding pairs
is the promise of a new generation.



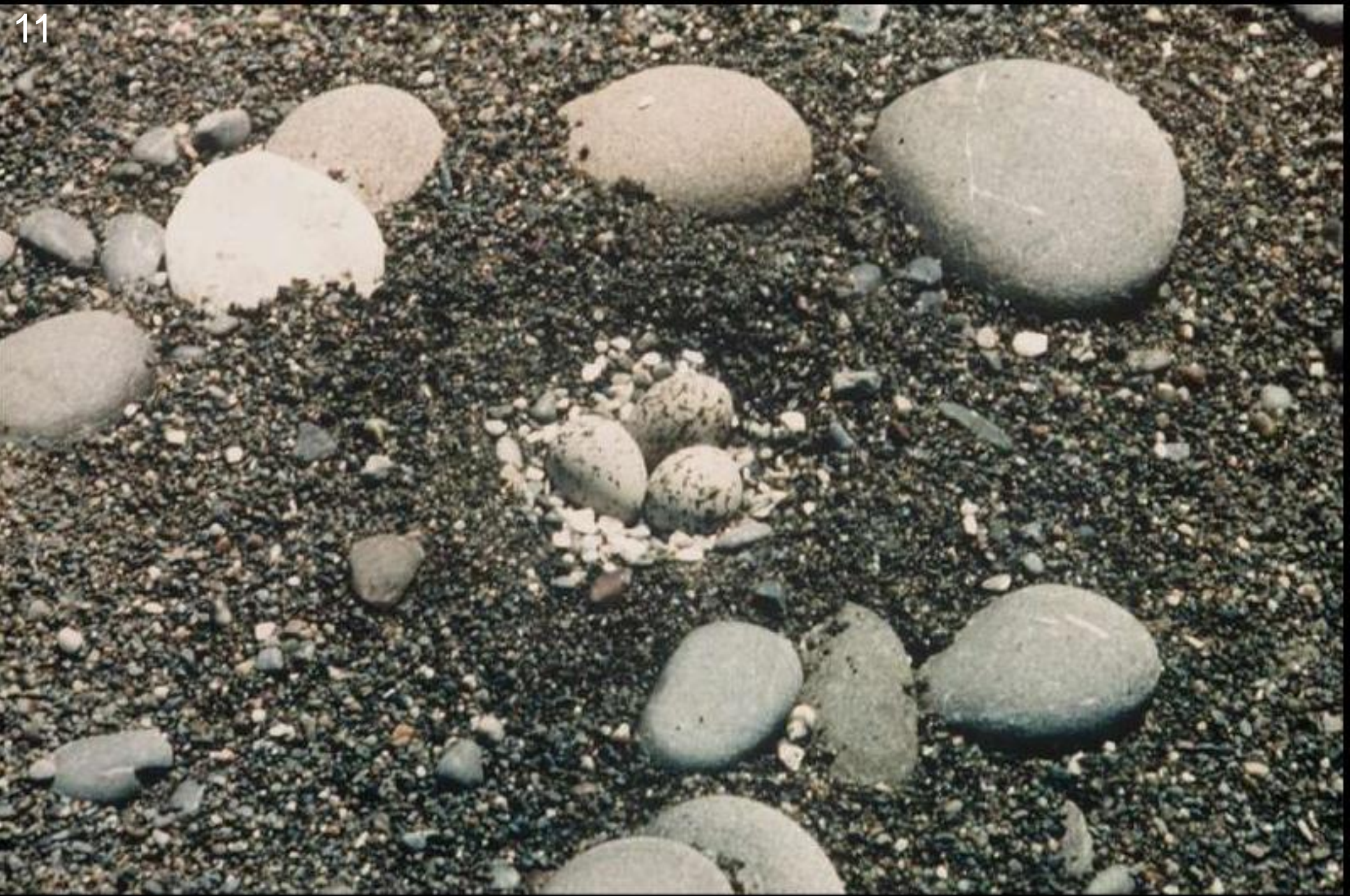


Male Snowy Plovers are devoted and protective fathers.





There is an artistic composition in Snowy Plovers' nests.



There is an artistic composition in Snowy Plovers' nests.



There is an artistic composition in Snowy Plovers' nests.



Males are the primary caregivers after the chicks hatch. Chicks feed themselves after their fathers show them where to find insects.





Males are the primary caregivers after the chicks hatch. Chicks feed themselves after their fathers show them where to find insects.





The tiny chicks emerge looking for safety and food in the seaweed (wrack line).





The tiny chicks emerge looking for safety and food in the seaweed (wrack line).





The tiny chicks emerge looking for safety and food in the seaweed (wrack line).





Imagine what the world looks like to a "Snowy" chick.





Imagine what the world looks like to a “Snowy” chick.





Several animals prey on Snowy Plovers and their eggs.
Some predators are native, while others were introduced by people.





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Some predators are native, while others were introduced by people.





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Snowy Plovers struggle to survive among vehicle tracks, trash, pollution, and oil spills.





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Most of the threats to the Snowy Plovers are increasing because of human influences.





Most of the threats to the Snowy Plovers are increasing because of human influences.



Photos graciously provided by

Peter L. Knapp

Phil Persons

Rich Hansen

Dennis Sheridan

Marlin Harms

Susan Van Der Wal

Carolina Van Stone

U.S. Fish & Wildlife Service (Ventura Office)

Marla Morrissey

and many others...

Some photos retouched by

Joe Golling

Slideshow created by

Cameron Clark

Table 1. Predators Causing Nest Failures of Snowy Plovers on the Oregon Coast 1990-2000 (TNC 2000)

USFW, 2002

Predator	Number of nest failures	Percent of nest failures
corvid (crow or raven unknown)	24	16
American crow	25	16
common raven	15	9
gulf ²	1	1
fox	1	1
raccoon	1	1
skunk	13	8
unknown mammal	5	3
unknown predator	62	40
adults predated (unknown predator)	8	5
total	155	100

Pickart, 2008



Fig. 1. The native dune grasses *Leymus mollis* and *Poa macrantha* mix with forbs, including *Abronia latifolia* (yellow sand verbena) and *Lathyrus littoralis* (beach pea), on the foredune at the Lanphere Dunes Unit, Humboldt Bay National Wildlife Refuge.



Fig. 10. Restored foredune grassland at the Lanphere Dunes Unit, Humboldt Bay National Wildlife Refuge.

Pickart, 2008



Fig. 6b. The same location in July 2001, five years after restoration work was completed.

Pickart, 2008



Fig. 4.1. Parabola dunes at Humboldt Bay, northern California. View is to the south. The distance from shore to parabola tip exceeds 1000 m. (Photograph by A. Wiedemann, June 1983)

Wiedemann and
Pickart, 2004



Fig. 4.4. Typical steep profile foredune vegetated with *Ammophila arenaria* prior to restoration. Humboldt Bay, California. (Photograph by A. Pickart)



Fig. 8. Bulldozers removing *Ammophila arenaria* for a western snowy plover habitat restoration project at the South Spit, managed by the Bureau of Land Management (beachgrass was first burned to reduce biomass).



Fig. 9. Charred remains of *Ammophila arenaria* at MacKerricher State Park. In one method of control, beachgrass is burned to stimulate regrowth, then treated with herbicide.

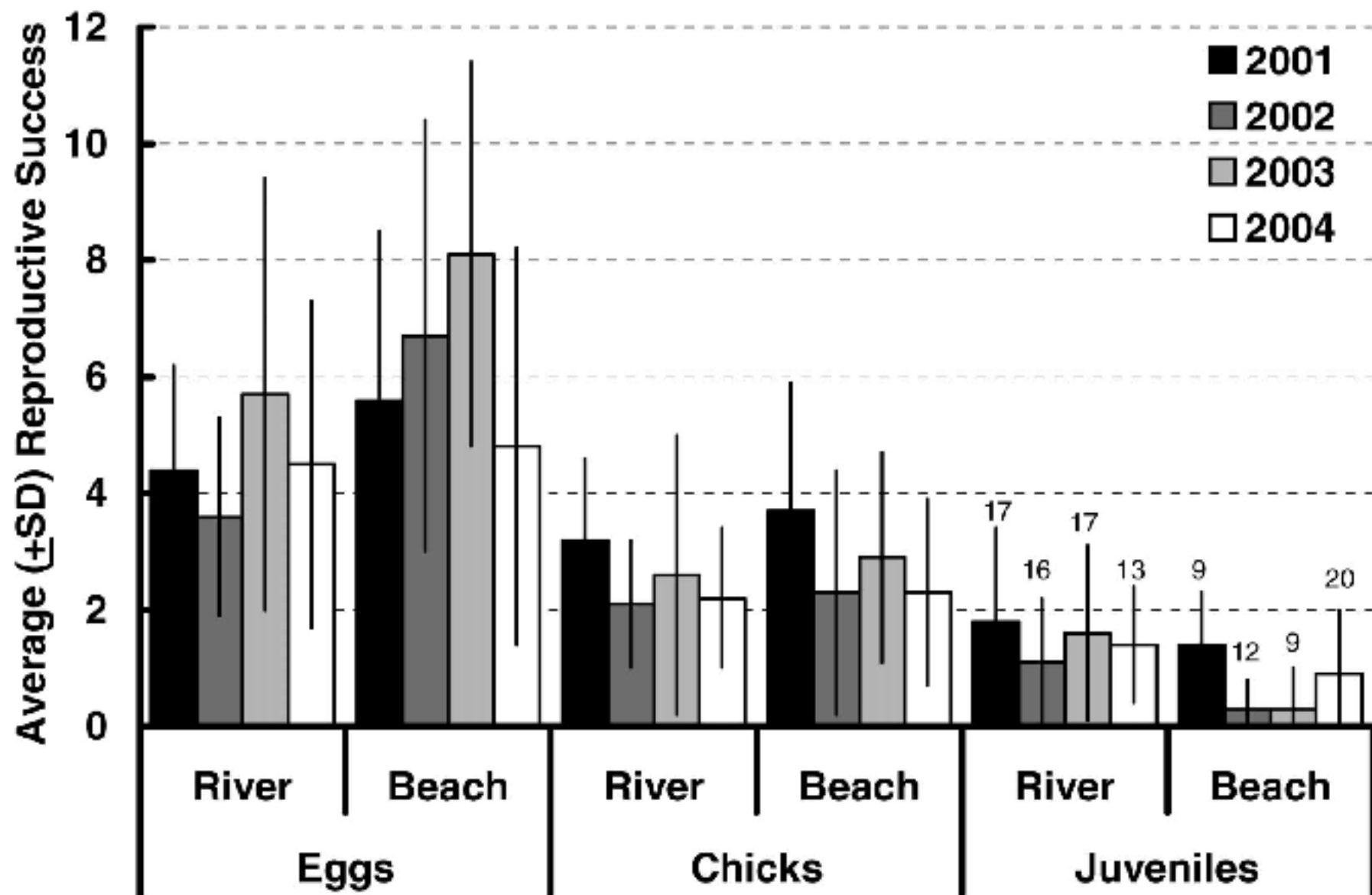
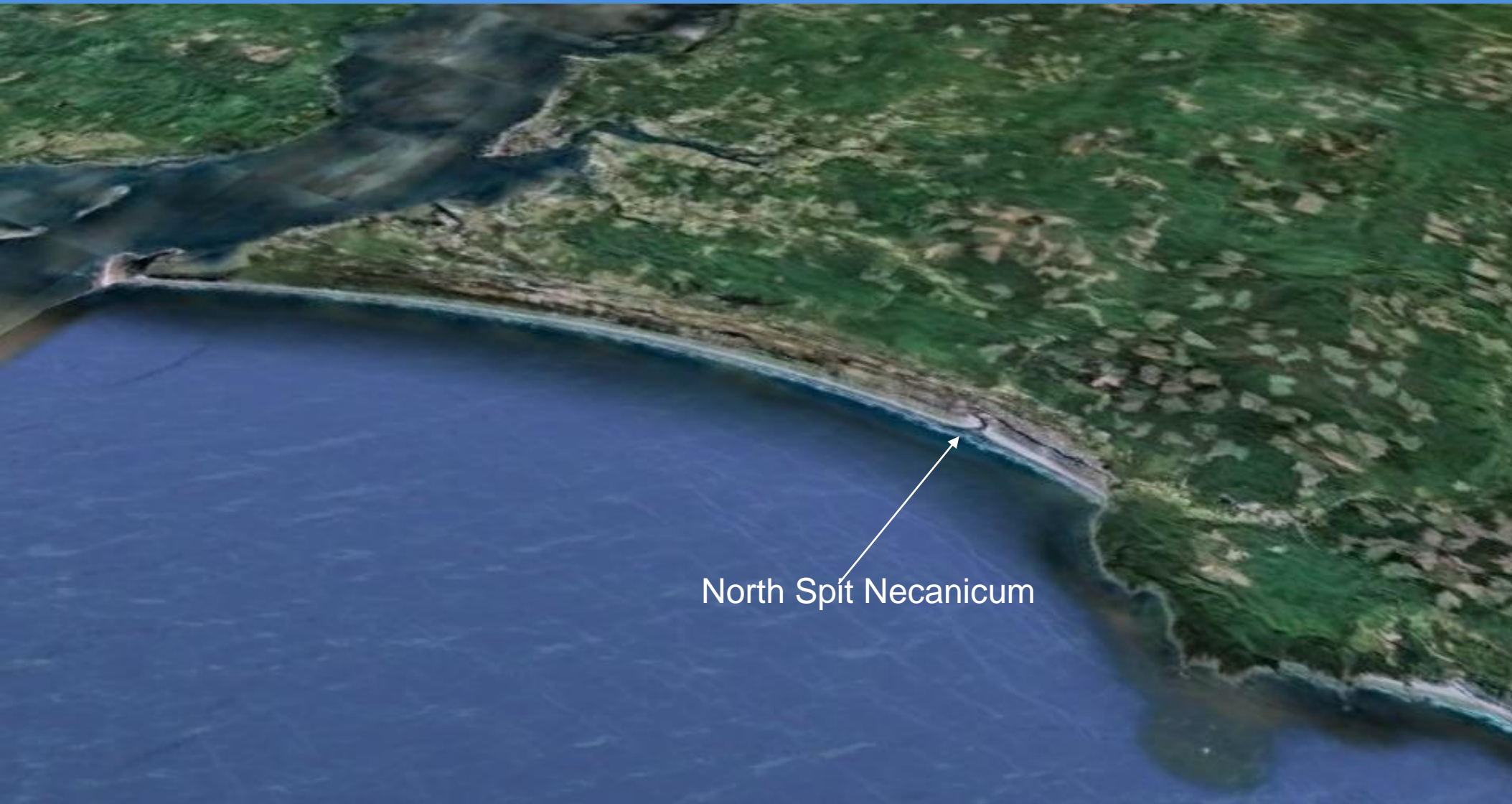


Fig. 3. Annual differences in average (\pm SD) eggs tended, chicks hatched, and young fledged per male Snowy Plover breeding in beach and river habitats in coastal northern California, 2001–2004. Sample size (number of plovers) is shown above the histograms for juveniles.



(1) Columbia River south jetty to Tillamook Head; 26 km



Bayocean Spit

(3) Cape Falcon to Cape Meares; 25 km

45



Baker Beach
Sutton Beach

Siltcoos
Overlook
Tahkenitch

Tenmile

Coos Bay N Spit

(11) Heceta Head to Cape Arago; 83 km

46

Bandon

New River

Floras Lake

(13) Coquille Point to Blacklock Point; 25 km





Imagine what the world looks like to a "Snowy" chick.



5. FIRST FLIGHT



1. NEST BUILDING

2. EGG LAYING

SNOWY PLOVER NESTING CYCLE



PRBO files



Ian Tall

3. INCUBATING



Dave Dixon

4. HATCHING



- **Open sandy beach**

- **Little vegetation**

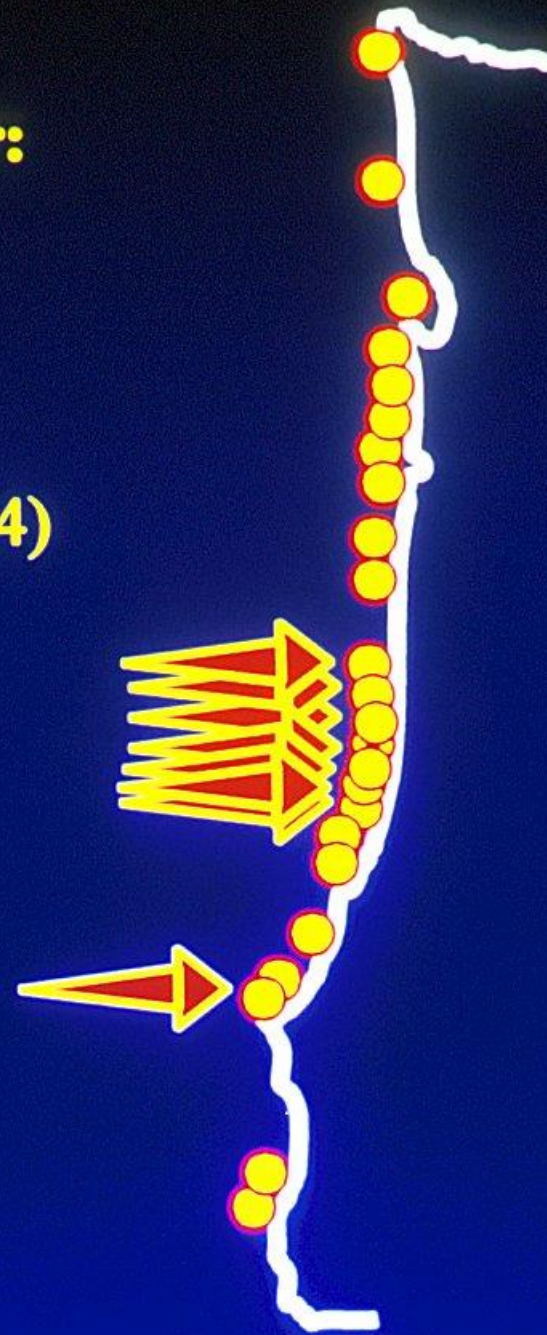
- **Some driftwood**

- **Scattered shells**

Pacific Coast Population of the Western Snowy Plover: Nesting Areas in Oregon

● Mapped Historic sites (24)

➤ 1997 sites (8)





SNOWY PLOVER THREATS

- Development
- Invasive Species
- Predators
- Recreation



1981 – 142 birds counted

1992 – Listed as threatened ESA

No of breeding No of adults fledglings

1993 60 36

1994 67 56

1995 94 57

1996 ~110 47

1997 ~110 40

1997/98 ENSO

1998 75 32

1999 77 54

2000 89 43

2001 80 32

2002 80 31

2003 93 60

2004 120 108

2005 104 77



MONITOR



CONTROL ACCESS



FENCE TO DETER PREDATORS



RESTORE HABITAT



Pickart, A.J. 2008. Restoring the grasslands of northern California's coastal dune. *Grasslands* 17(1): 3-9.

Colwell, M.A., C.B. Millett, J.J. Meyer, J.N. Hall, S.J. Hurley, S.E. Mcallister, A.N. Transou, and R.R. LeValley. 2005. Snowy plover reproductive success in beach and river habitats. *Journal of Field Ornithology* 76(4): 373-382.

Website:

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