

# Tule Elk

## The Return of a Species

Sailing past the Point Reyes peninsula in the year 1800, explorers saw large herds of elk roaming through open grasslands. Sixty years later, the elk were gone from Point Reyes and by 1870 they were thought to be extinct statewide. Today, elk again roam along the hills of Tomales Point and several other areas within California. This is the story of their remarkable comeback.

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**Historic Tule Elk Range**  
Population: 500,000



**1870**  
Population: fewer than 10



**1998**  
Population: 3,200

### A Look into the Past

The tule elk (*Cervus elaphus nannodes*) is a subspecies of elk native to California. They occur nowhere else. For thousands of years, as many as 500,000 tule elk thrived in California—from the lush open country of the Central Valley to the grassy hills on the coast. But following the Gold Rush of 1849, the elk were hunted nearly to extinction. At the same time, elk habitat was converted to agriculture, and livestock grazed what had been elk forage. These developments caused the elk's decline and nearly caused their extinction.

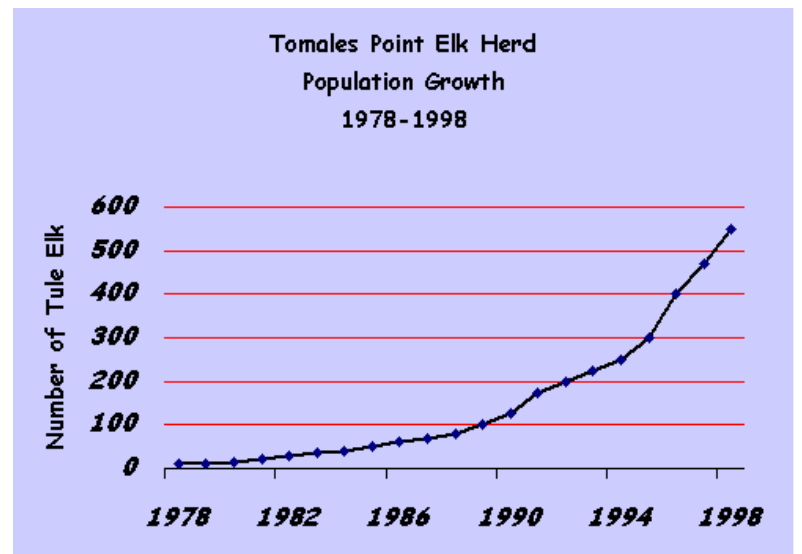
Imagine the surprise of the ranch workers in 1874 who discovered several tule elk while draining a marsh to create agricultural fields. Not a single tule elk had been seen for four years! Fortunately the landowner, Henry Miller, felt compelled to protect these last elk, and by 1905 their population had grown to 140. When the elk began to eat Miller's crops and trample his fences, he captured some and moved them to other locations in California. This was the first time the elk were moved for conservation purposes. It was not to be the last.

### Revival and Recovery

Tule elk received official protection in 1971 with state Senate Bill 722, called the Behr Bill after its author, Peter Behr. This bill prohibited hunting of tule elk—then numbering 500—until their population reached 2,000. As a result of management by the California Department of Fish and Game, the tule elk population grew to 2,000 in 1989. By 1998, there were more than 3,000 elk in California.

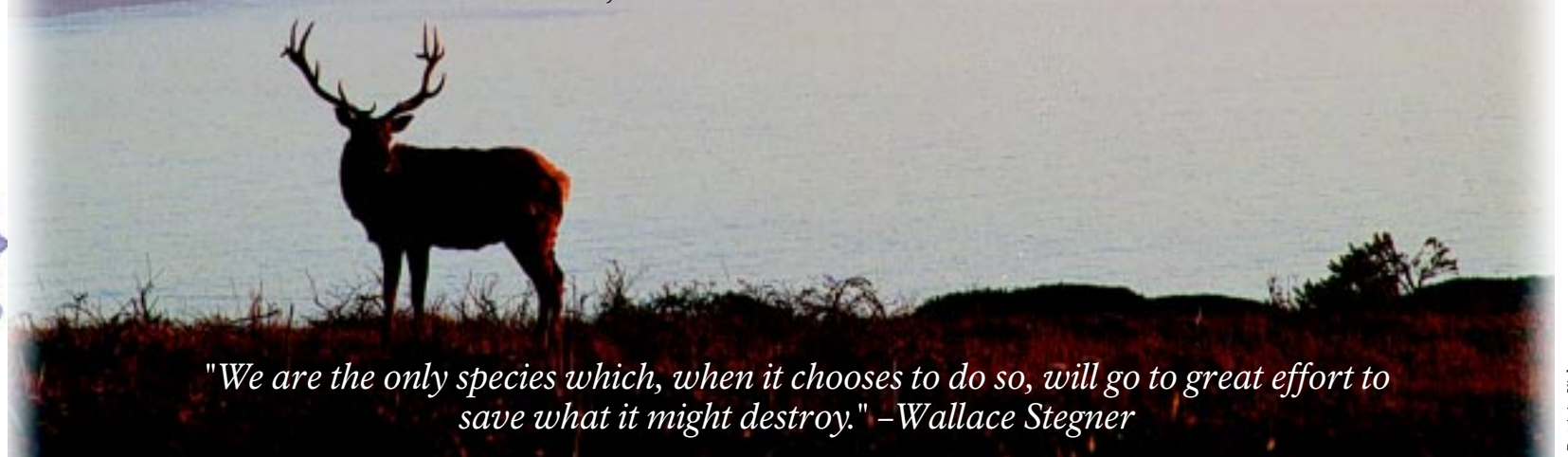
In 1976, Public Law 94-389 directed the federal government to make suitable lands available for "the preservation and grazing of tule elk." Two years later, ten tule elk were moved to Tomales Point, the

northernmost part of Point Reyes National Seashore. There they survived a decade of drought. With the return of the rains in the early 1990s, range conditions improved dramatically and the elk herd grew rapidly. By 1998, the herd size surpassed 500 animals, one of the largest of the 22 herds currently in the state.



### A Challenge for the Future

Today's tule elk population is larger than it has been for 130 years: 3,200 and growing. California's human population, now approximately 32 million, is also growing. As the human population expands, wildlife habitat is being converted to human habitat—housing, stores, schools and highways. As a result, the elk have fewer and fewer places to roam. Tule elk will probably never return to their historic numbers nor to all of their historic range because of this human growth and lack of suitable elk habitat. But, if they and other wildlife are to survive, human expansion into the landscape must be balanced with the need to maintain the treasured open spaces of California.



*"We are the only species which, when it chooses to do so, will go to great effort to save what it might destroy." –Wallace Stegner*



# Making Responsible Choices for the Future

## Population Growth and Range Limitations

Since their reintroduction to the Point Reyes peninsula, the tule elk have lived within a 2,600-acre reserve at Tomales Point. Their range is restricted by the Pacific Ocean to the north and west, Tomales Bay to the east, and a three-mile-long, ten-foot-tall fence to the south. Given the mild climate and lush habitat of Tomales Point, the elk live in a virtual paradise. As long as there is abundant rainfall and forage, they will continue to multiply.

Vitality and youth characterize the existing herd, as more than half the animals are less than five years old. Several hundred of the females are old enough to reproduce. Fewer than five percent of the elk die each year; they have an average life span of twelve years. As the herd grows within the restricted Tomales Point area, they place a greater demand on their habitat. Without adequate rainfall, their forage could become deficient, causing them to suffer stress, starvation, and eventually a population crash.



## The Point Reyes Solution

Since 1993, researchers and biologists from the National Park Service, U.S. Geological Survey, University of California at Davis and Berkeley, Humboldt State University, and the California Department of Fish and Game have studied the complex question of how to accommodate the growing elk herd. They looked at the herd's composition and size, incidence of disease, impact on endangered species, and the condition of the plant communities on Tomales Point. These studies provided the information necessary for the park to develop a management plan to ensure the health of the herd.

After consideration of a number of alternatives and public review, the park is implementing a scientific approach to manage the tule elk herd. The approach involves three major components: the continuation of research, relocation, and immunocontraception.

In the environmental assessment, several other options were explored but rejected:

- **Sterilization** was eliminated as an option because of its irreversibility and its intrusive, inhumane implications.
- Due to possible disease transmission and competition with cattle for forage, removing the elk fence at Tomales Point will not be considered as long as the adjacent dairy ranches are in operation.
- In order to leave the wildlife wild, the park will not attempt to establish new herds that require permanently fenced, restricted ranges.
- Hunting elk within the park is not an option because of strong public opposition and safety concerns.

## Management Actions

### Research

The Seashore will continue its intensive research effort, studying tule elk ecology and population dynamics. Researchers will explore methods to alter elk population size where and when necessary, look at abundance of food and water, predation, disease, and population control techniques. This research information will help the national seashore revise the management plan to accommodate new situations and changing conditions.

### Relocation

As a scientific trial to establish the effectiveness of expanding their habitat, up to 70 elk will be moved to the Limantour wilderness area from the existing herd at Tomales Point. Working with other agencies, the Seashore will seek to relocate elk elsewhere in the state to establish new herds in the historic range.

### Immunocontraception

Based on the recommendations of three scientific panels, the Seashore is studying a form of contraception called immuno-contraception within the Tomales Point herd. The immunogen, administered in a dart, works by stimulating the cow's immune system to produce antibodies that block sperm from attaching to the ovum. This contraceptive is reversible and antibodies resulting from the vaccine do not pass through the food chain. This means there is no known environmental byproduct—no other plants or animals will be affected in any way. Annual booster shots may be necessary before the next breeding season.

In August 1997, the national seashore began a pilot study of immunocontraception. Research will determine if this "elk birth control" can be used effectively with the future relocated elk population at Point Reyes National Seashore.

*Elk add diversity and beauty to the Point Reyes peninsula, restore the natural and cultural character of the land and enrich our lives. As a result, we must be committed to making responsible choices that ensure the elk's survival.*



# Elk Facts

## Life Cycle

Female elk are sexually mature by two years of age, although they may be able to breed as yearlings. Nearly all female elk will reproduce during their lifetime.

A female is likely to have six to ten calves in her lifetime. Males are sexually mature at age two, but usually aren't able to breed until they are strong enough to compete with other bulls to defend a harem of cows. Half the the male population will remain bachelors; most breeding is accomplished by ten percent of the male population.

**Gestation period:** Calves are born 8.5 months after conception. They nurse for four or five months, but start nibbling on grass when they are less than one month old.

**Lifespan:** Twelve years is an average lifespan for wild elk; some elk have been known to live 25 years in captivity.

## Predators

The tule elk at Point Reyes National Seashore are practically free from predators.

**Humans** could kill elk with weapons, but hunting is not allowed in the Seashore.

**Black and grizzly bears** usually eat plants, but they would eat elk too. However, there are no longer bears in the park.

**Coyotes** are found at the Seashore, and will kill elk calves, but an elk™s flailing hooves can easily kill a coyote. No coyote attacks on elk have been recorded in the Seashore.

**Mountain lions** can kill elk of any age, but find smaller deer an easier target. No mountain lion interactions with elk have been documented in the park.



Gary Nichols

## Antlers vs. Horns

Antlers are often confused with horns. Horns are slow-growing and permanent, usually grown by both sexes, and are made of a bone core covered by a thin layer of keratin.

Antlers usually grow only on males and are made completely of bone. They are shed and regrown annually. In the spring, they are covered with "velvet" a system of blood vessels that nourish the bone as it grows. A set of elk antlers can weigh up to 40 pounds.

The size and symmetry of the antlers reflect the health as well as the age of the animal. A "spike bull" is less than two years old and has only one point on his antlers. Older bulls have more points, but they do not grow a point for each year of age.

Antlers are used as weapons by the males to compete for the chance to breed. A young bull is easily intimidated by a mature bull's large rack of antlers. Two evenly matched bulls may use their antlers in combat, if other attempts at intimidation (vocalizations and posturing) have failed.

A bull who has proven himself bigger and stronger than the others defends a harem of up to 30 females. This means he is the primary bull, responsible for 80% of the breeding. Towards the end of the breeding season, other "secondary" bulls may get the opportunity to breed as the primary bull tires.

## Tule Elk Ranges



Patricia Kirby



## How You Can Help the Elk

A number of organizations are concerned about the welfare of elk in California and throughout the U.S.A. They provide a range of services, from educational materials to buying and managing land for elk habitat. You can get involved in a number of ways, among which are the following:

- **Donate** – Give to and help raise money for agencies and nonprofit groups that protect habitat.
- **Protect Habitat** – Prevent domestic dogs from roaming, follow park regulations and guidelines listed here and at trailheads.
- **Learn** – Find out more about elk from the organizations listed below. Share information with friends and family.
- **Volunteer** – Be an elk docent on summer and fall weekends at Point Reyes National Seashore. Call (415) 663-8522, ext. 285 for an application.



### For More Information

The Committee for the Preservation  
of the Tule Elk  
Post Office Box 3696  
San Diego, CA 92103-0220

California Department of Fish and  
Game  
1416 West Ninth Street Sacramento,  
CA 95814

The Rocky Mountain Elk Foundation  
2291 West Broadway  
Missoula, MT 59802-1813

Point Reyes National Seashore  
Association  
Point Reyes Station, CA 94956

## Elk Watching Tips

- For your own safety, always observe elk from a distance. Use binoculars and spotting scopes. If an elk becomes alert or nervous and begins to move away, you are too close.
- If viewing from your car, pull off the road or park in designated areas.
- If you are on foot, stay on the trail; do not come between a cow and calf, a bull and a group of cows, or two bulls challenging each other.
- Watch quietly; whisper. Move slowly.
- Do not feed the elk. Feeding elk or any other wildlife is unhealthy for the animals, potentially dangerous for visitors, and strictly prohibited.
- Ride your bicycle only on designated trails.
- Bring your pets only where they are allowed.
- Do not collect or remove elk antlers. They are an important source of calcium for many wildlife species such as rodents and deer.

# Point Reyes National Seashore



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Gary Nichols