

# Animal Husbandry & Training

## INSIDE THIS ISSUE:

When Did People First Start Training Animals?

Why Do We Train Animals?

What Is A Behavior?

The Steps of Marine Mammal Training

What is Animal Husbandry?

Benefits of Husbandry & Training

Animal Training Vocabulary

## Dolphin Encounters

### A HISTORY OF TRAINING: WHEN & WHY...

#### When did people first start training animals?

People have been training animals for thousands of years. Historically, falconers have trained hawks. Dogs have been trained for hunting, for herding livestock, and for pulling sleds. Elephants have been trained to pull or carry logs. Horses and camels have been trained for riding and hauling. Today, people still train animals.

Marine mammal training is a relatively new field. People have been training killer whales for only about the past 35 years. Recently the learning aptitude of marine mammals has been further explored.

#### Why do we train animals?

Through the years, millions of people have visited marine parks, zoos and aquariums like Dolphin Encounters. Here,

people learn about marine animals, their ecosystems, and conservation measures. Observing animals on display as well as in interactive programs not only entertains our guests, but also educates them. The unique opportunity to observe and learn directly from these live animals increases public awareness of wildlife.

Marine mammals at Dolphin Encounters are trained to assist in their own care. They present body parts for examination, measurement, blood sampling and give urine samples when asked by their trainers. Training helps animal care specialists, veterinarians, and trainers to more easily and routinely gather information to form a complete picture of each animal's health.

Training also benefits research. By training animals to respond



Because of training, the animal can voluntarily participate for medical procedures such as dental work.

to various stimuli in their environment, researchers can gather scientific information not otherwise available. The information gathered at Dolphin Encounters, combined with the results of field observations, may be helpful in future conservation efforts.

## WHAT IS A BEHAVIOR?

A behavior is the way an animal acts. Anything an animal does involving action and response to stimulation is a behavior. Walking, swimming, flying, eating, blinking, and breathing all are examples of behavior. Animals behave in certain ways for four basic reasons: to find food, to interact in social groups, to avoid predators, and to reproduce.

**Behaviors are important for survival.** Animal behaviors

usually are adaptations for survival. Some behaviors, such as eating, or escaping predators, are obvious. But other behaviors, which also are important for survival, may not be as easily understood. For example, a flamingo standing on one leg, drawing the other leg, drawing the other leg close to its body, is exhibiting thermoregulation behavior. This behavior is an adaptation for

conserving heat that would otherwise escape from the legs.

#### Animals aren't human.

The scientific study of animal's behavior in the wild is known as ethology. When studying animal behavior, observers must take care not to mistakenly attribute human characteristics or motivations to animals — known as anthropomorphizing.

#### What is a learned behavior?

Animals learn some behavior through experience. In fact, scientists define learning as a relatively permanent change in behavior as a result of experience. For the most part, learning occurs gradually and in steps. The scientific study of animal learning is a concern of psychology.

(continued on page 2...)



Any action – like this jump – is a behavior.

## WHAT IS A BEHAVIOR? (CONTINUED FROM PAGE 1)

The genetic makeup and physical structure of an animal's body determine what kinds of behavior are possible. An animal can learn to do only what it is physically capable of doing, such as jumping or spinning.

**Are marine mammals intelligent?** The ability of an animal to process information is based on its brain anatomy as well as specific experiences the animal has. Rating the intelligence of different animals is misleading

and subjective. In fact, a reliable and consistent intelligence test for humans has yet to be developed. It would be improper to attempt to quantify or qualify the intelligence of animals using only human guidelines.

## MARINE MAMMAL TRAINING

**Marine mammals learn through operant conditioning.** This is a type of learning in which behaviors are altered by the consequences that follow them. When an animal performs a particular behavior and the consequences of that behavior are in some way reinforcing to the animal, the animal is likely to repeat that behavior. A reinforcer lets the animal know when it has performed the desired behavior and encourages the animal to repeat desired behaviors. Animal training at Dolphin Encounters is based on reinforcing desired behaviors with a variety of rewards.

### How do Dolphin Encounters trainers reinforce the animals?

A reinforcer can be anything that the animal may perceive as favorable. A back scratch, a toy, a fish, or a favorite activity are all examples of reinforcers.

### Learning occurs in steps.

Most complex behaviors cannot be learned all at once, but develop in steps. This step-by-step learning process is called shaping.

When children learn to ride a bicycle, most begin on a tricycle, go on to ride a two-wheeler with training wheels, and eventually master a larger bicycle, maybe even one with multiple speeds. Each step toward the final goal of riding a bicycle is reinforcing.

The animals learn complex behaviors through shaping. Trainers reinforce the animal for each step toward the final goal of the desired trained behavior. The amount of time it takes to train an animal varies greatly among species and individuals.

Signals communicate desired behaviors. In a program, the trainer may request many different behaviors of an animal. The animal is trained to differentiate, or discriminate, among situations. How does a dolphin know when to do a particular behavior? Through pairing a visual signal with a behavior that the animal has already learned. The signal is paired with the stimulus that

originally elicited the response.

### What about unwanted behavior?

If a trainer requests a specific behavior and the animal does not respond or the

animal responds with an incorrect behavior, the trainer must be careful not to reward the response. The trainer uses a technique called the Least Reinforcing Stimulus or LRS. It begins when an animal returns to the trainer. The trainer gives the animal this neutral response for 3 to 5 seconds. The trainer's relaxed demeanor is a stimulus for the animal to emit calm behavior. The calm animal is then given the opportunity to perform another behavior that could result in a reward. An animal is never forced to respond to a signal nor is it ever punished for an incorrect response.

**How is an animal trained to do a new behavior?** To train an animal it often is helpful to lead the animal through a behavior in small steps. Dolphin Encounters trainers use their hands as a focal point or target to direct an animal toward a position or direction.

When a behavior takes place farther away, trainers may use a long pole with a foam float or ball on the end as a target. Other targets include a tap on the water at the side of a pool with a hand or an ice cube tossed into the water.

**How is an animal trained to follow a target?** Trainers touch the target gently to the animal. The animal is rewarded. This is repeated several times.

Next, the target is placed a few inches away from the animal. The trainer waits for the animal to touch the target. Since the animal has learned that whenever it touches the target it gets a reward, it moves toward the target and touches it. Eventually the animal will follow the target much longer distances or even out of the water to perform a behavior.

Here's an example of how a dolphin might be trained to do a high jump: first, the dolphin is rewarded for touching the target above its head. The trainer then raises the target a few inches higher and rewards the animal for touching it. As the dolphin succeeds, the trainer continues to raise the target higher until the animal can no longer reach it from a sit up position.

The trainer would then ask the animal to go to a piece of ice farther away and come back to jump up to the target. The animal will understand that the signal for the jump means that it should swim away to gather enough speed and jump to the full height of the target for the behavior. Eventually the trainer will fade out the target and the animal will do the behavior just on the signal alone. If the behavior were to break down, the trainer need only to reintroduce the target to fix the behavior to criteria.



Two dolphins perform the Flat Beach, targeting their rostrums and tails to the blue mat.

## THE BENEFITS OF ANIMAL HUSBANDRY & TRAINING

### Experts watch & learn.

A dedicated team of animal care professionals make up the staff of Dolphin Encounters. Our animal husbandry is based on a comprehensive preventative medicine program. Direct animal observation is the most useful diagnostic tool. Staff take time every day to observe, examine and record each animal's behavior and appetite. Unusual changes in behavior often are the first indication of the need for medical attention.

### Nutritional needs are met.

At Dolphin Encounters, staff prepare hundreds of pounds of food each day for the animals. Food is sorted, inspected and weighed out under strict sanitary conditions. Added vitamin supplements ensure that each animal's nutritional requirements are met.

### Routine tests are part of the plan.

Animals are given regular physical exams, which include obtaining samples for analysis. From this information, vets

usually can detect health concerns early, begin treatment, and prevent serious illness.



A comprehensive health program leads directly to healthy animals and the successful birth of calves like this one.

### Each animal has a history.

The animal training department maintains a complete health history for each dolphin. Health records include test results, periodic measurements, diets and behavioral notes. Information is entered into a computer database so it can be stored, collated and reviewed.

### Habits are healthy.

Large, natural habitats are designed for the animal's well being. Water is naturally filtered through tidal movement,

providing healthy clean ocean water. Natural wildlife such as fish, plants and crustaceans add to the mental stimulus that animals have each day to promote their natural behaviors.

### Animals assist in their care.

Animal husbandry is closely intertwined with training. Training helps animal care specialists and veterinarians form a complete picture of each animal's health. Marine mammals are trained to assist in their own care. They present body parts for examinations, measurements and even volunteer samples such as urine, milk or stomach contents. Veterinarians and trainers are also to perform delicate procedures such as dental work and ultrasounds.

### Breeding programs are successful.

Trained husbandry procedures enable Dolphin Encounters veterinarians and trainers to study marine mammal reproductive biology, including gestation, nutritional needs, and growth rates.

This firsthand knowledge has led to successful breeding of our Atlantic bottlenose dolphins and other marine mammals at various zoological parks. Of the dolphins at Dolphin Encounters, over half were born and raised here.

Other species of marine animals that have successfully propagated at other facilities include beluga whales, Pacific walrus, California sea lions, sea otters, and harbor seals just to name a few.

### Visitors are educated & entertained.

Through the years, millions of people have visited marine parks, zoos and aquariums. At Dolphin Encounters, people learn about marine animals and ecosystems. Through observing animals on display and interacting them in our programs, visitors are not only entertained but educated.

The unique opportunity to learn directly from these live animals increases public awareness of wildlife and encourages them to take an active role in protecting marine mammals in the wild.

## ANIMAL TRAINING VOCABULARY

**Approximations**—the small steps that a behavior is broken down into when a trainer is planning how to train a specific behavior

**Behavior**—the way an animal acts

**Communicate**—to convey information

**Conditioned Reinforcer**—a stimulus that after repeated pairing with a positive reinforcer, takes on the positive qualities of that reinforcer and becomes reinforcing in itself

**Husbandry**—the science and practice of breeding and caring for animals

**Least Reinforcing Scenario**—the consequence that follows undesired behavior, combined with the trainer's signal to emit calm behavior. The scenario has four components: no acknowledgement of the undesired behavior, no reinforcement, the trainer's relaxed signal, and the animal's calm behavior.

**Marine Mammal**—a mammal adapted to live in the marine environment and dependent on the ocean for food

**Operant Conditioning**—a type of behavior in which behaviors are altered by the consequences that follow them

**Pairing**—associating a new stimulus with a familiar one; a way of training an animal to respond to a new stimulus

**Reinforce**—to strengthen the occurrence of a behavior by delivering a positive reinforcer or consequence

**Positive Reinforcer**—a stimulus the animal likes that is added into an animal's environment after a behavior; causes an increase in the likelihood that an animal will perform that behavior in the future

**Response**—an activity of an animal that results from a change in the environment

**Shaping**—a step-by-step process of training a behavior

**Stimulus**—an environmental change that brings about a response from an animal

**Target**—a focal point that directs an animal towards a position or direction