Information & Resource Kit

Elephant Lands

Opens December 2015

For more information, contact:
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ABOUT THE OREGON ZOO

The zoo is a service of Metro and is dedicated to its mission of inspiring the community to create a better future for wildlife. Committed to conservation, the zoo is currently working to save endangered California condors, Oregon silverspot and Taylor’s checkerspot butterflies, western pond turtles and Oregon spotted frogs. Other projects include studies on Asian elephants, polar bears, orangutans and giant pandas. Support from the Oregon Zoo Foundation enhances and expands the zoo’s efforts in conservation, education and animal welfare. Members, donors and corporate and foundation partners help the zoo make a difference across the region and around the world. For hours and rates, visit oregonzoo.org or call 503-226-1561.
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Elephant Lands Fact Sheet

The most ambitious project in Oregon Zoo history is now complete: a world-class home for a world-famous elephant family. Here is a brief overview of a habitat engineered to usher in a new era in elephant care and welfare.

Opening Date:
December 2015

Size:
Elephant Lands spans 6 acres, extending around much of the zoo’s eastern side from the central lawn to the veterinary medical center. It is more than four times the size of the zoo’s former elephant habitat, and accounts for nearly one-tenth of the zoo’s total 64-acre footprint.

Budget:
The total budget for the project was $57 million, which—in addition to Elephant Lands itself—also included construction of a service access road, rerouting of the zoo train loop and relocation of the zoo’s Wildlife Live headquarters. Elephant Lands was the fourth of eight major projects made possible by the community-supported 2008 zoo bond measure.

Thanks to the generous support of community members, the Oregon Zoo Foundation raised $5.35 million to support Elephant Lands and the zoo’s conservation, education and animal welfare efforts. Gifts from private donors supported educational interpretives, technology and features to enhance the habitat, as well as ongoing efforts to inspire our community to care about the natural world.

Features:
• Engineered to promote animal welfare and herd socialization, Elephant Lands features large, connecting outdoor habitats linked to flexible and communal indoor spaces. From the project’s inception, the emphasis has been on activity and choice: letting the elephants decide how they will spend their days and nights.

• Three outdoor habitats provide a rich and diverse rolling landscape for Portland’s elephant family, with sandy hills, deep swimming pools, mud wallows and relaxing shady areas.

• The indoor space—one of the largest in the world—is nearly 33,000 square feet, and 43 feet tall at its highest point. It is designed to allow access to the outdoor habitats, at the animals’ discretion, in all types of weather.

• Throughout Elephant Lands, indoors and out, three to four feet of sand serves to cushion and protect the elephants’ feet while also giving them a workout.

• Play structures and hanging feeders require elephants to use their muscles and brains to reach hidden treats. Automated feeders, programmed to dispense food at random times throughout the day, encourage natural foraging behaviors.

Animals:
Portland’s famous Asian elephant family includes six members, ranging from the oldest male on the continent (Packy) to the rambunctious youngster Lily, who recently turned 3.
Our Vision for Elephants

When you look at elephants at the Oregon Zoo, you’re seeing mothers and daughters, brothers and sisters, aunts and grandparents. You can feel the bonds between them. It’s hard not to be moved by these families. And it’s hard to imagine a world without them. Elephants are in trouble in the wild. That’s why inspiring people to take action for their survival is more important than ever. To realize this vision, the Oregon Zoo is working with zoos across the country to maintain a healthy, diverse North American population of Asian elephants. We’re also supporting on-the-ground efforts to protect elephants in their native countries from Kenya to Malaysia.

A place for families

In their native habitats, elephants live in family groups led by a dominant female who maintains order and provides her family with survival skills. This ancient matriarchal structure is the guiding principle of the Oregon Zoo’s elephant vision. Caring for elephant families means nurturing complex relationships and providing a life and environment full of choice.

The importance of family becomes especially apparent when a baby is born. Each member of the elephant herd plays a unique and critical role in protecting and raising the calf and supporting the mother. Elephants wouldn’t know how to be elephants if it weren’t for the efforts of the entire family, including bulls. Male calves need bull role models to teach them how to behave around females.

When male elephants come of age in the wild, they leave their families and spend most of their time on their own or in bachelor groups, only interacting with the females periodically. This dynamic helped shape the design of Elephant Lands. The family’s expanded new habitat will allow male elephants to socialize, whether in proximity with the female group or separately as a bachelor group.
Explore the Habitat

Elephants are a lot like us: emotional, intelligent and highly social. To design a habitat that honors the needs of this amazing animal, the Oregon Zoo drew on more than 50 years of elephant research and science-based care.

Elephant Lands brings to life the zoo’s philosophy that all animals’ lives should be filled with choice. Feeding stations, mud wallows and water features, including a 160,000-gallon pool, encourage elephants to be active 14–16 hours a day, just as they would in their range countries.

Indoor areas with state-of-the-art heating and ventilation systems let the zoo’s elephant family move inside and out as they please, choosing where to spend their days and nights. Together, the Elephant Building and Forest Hall form one of the world’s largest indoor elephant facilities.

To keep the herd comfortable during the building of Elephant Lands, animal-care staff and construction managers devised a phasing plan to gradually expand the elephants’ accessible space.

1 Forest Hall | Opened May 2015

The largest building in the Oregon Zoo’s history, Forest Hall is 43 feet tall at its highest point; together with the Elephant Barn, it is nearly 33,000 square feet. Forest Hall has been open to the herd since May 2015, but wasn’t accessible to zoo visitors until December. Inside, people can learn about the 5,000-year history of the human-elephant relationship around the world—including the Oregon Zoo’s own story, which began in the 1950s.

2 Elephant Barn | Opened May 2015

Adjacent to Forest Hall, this 14,000-square-foot behind-the-scenes holding area replaced a building dating to 1959.
3 South Habitat | Opened December 2015

With a variety of features, from mud flats to a wading pool and jet spray, this area will provide myriad activities for elephants. Terrace and theater areas overlooking the south habitat will offer visitors up-close and panoramic views of elephants, as well as opportunities to learn from the zookeepers who care for the herd.

4 Encounter Habitat | Opened February 2014

Adjacent to the zoo’s central lawn, this portion of the habitat was the first completed. As with all of Elephant Lands, it is covered in sand 3–4 feet deep to cushion and protect the elephants’ feet.

5 Elephant Pool | Opened December 2015

The larger of two pools at Elephant Lands, a 160,000-gallon pool visible from Elephant Plaza is 80 feet wide and 12 feet deep. Both pools incorporate state-of-the-art filtration and treatment systems that completely filter the water every hour to maintain quality and allow re-use. The pool also includes a play jet that sprays bursts of water, controlled remotely from a keeper presentation area.

6 Elephant Plaza | Opened April 2015

Already a popular picnic spot, the plaza introduces guests to the habitat. The plaza’s Elephant ID Station will help you locate the herd across Elephant Lands’ six acres.

7 North Habitat | Opened April 2015

Some lucky community members had a chance to “test drive” this portion of the habitat before it opened to Lily, Samudra and the others. Features include hilly terrain, giant logs, boom feeders and a shade structure.
Creature Comforts: Elephant Sand

When Rose-Tu, Lily and the rest of Portland’s elephant family ambled into a portion of their new digs at the Oregon Zoo this week, they were taking a big step into history—and, as it turns out, into a yard filled four feet deep with sand.

It’s not just any sand either: Planning for the expansive, naturalistic Elephant Lands reached a truly granular level the past few years, as designers researched, sampled and tested a variety of sands before settling on a just-right “Goldilocks” variety deemed optimal for elephants.

Sedimental journey

“We started planning Elephant Lands by surveying what other people who cared for elephants were doing,” said Bob Lee, the zoo’s elephant curator. “We wanted to see what the best habitats in the world had to offer, and add that to our own experience and knowledge.”

In 2012, Lee and other zoo officials visited Ireland’s Dublin Zoo, which some years earlier had remade its outdated elephant habitat in a transformation similar to the one currently underway here.

“I was particularly impressed by the way they were using sand,” Lee said. “It was several feet deep, and the elephants interacted with it in a lot of different ways—tossing it up with their trunks to dust themselves or digging up treats that the keepers had buried. We already had some sand in our outdoor habitat, but this stuff was much deeper and a different type of sand. We brought a sample back with us to show our designers.”

Enter Sandman

When Lee and the others got back from Ireland, they turned the sample over to the Elephant Lands design team, and project engineer Wayne Starkey took up the charge.

“The sand that they brought back had been sourced locally from beaches in Ireland,” Starkey said. “So the trick for us was to find something similarly workable here. We were looking for sand that was readily available, would drain well and didn’t have any sharp edges.”

The zoo had geotechnical engineers analyze the Dublin sand, and in 2013, Starkey visited CalPortland’s sand plant in Vancouver, where he looked at samples of local Columbia River sediment, washed through screens of various sizes to ensure a uniformity of the grains.

Starkey zeroed in on three varieties: masonry, a finely processed sand that, as the name implies, is used mainly for stonework; a coarser type that was better for drainage; and a sand referred to as USGA topdressing, used in maintaining golf courses.
“We wanted to find the Goldilocks elephant sand,” he said. “The sand that was ‘just right.’ First, I went outside and watched the heavy equipment rolling over the different varieties. I wanted to gauge how well it would drain.”

The fine masonry sand didn’t pass the drainage test, so Starkey was left with two choices; the next step was to elephant-test them. He brought in one transfer load (about 26 cubic yards) of the coarser sand and one transfer load of USGA topdressing.

“We tried each variety out in different sections of the back elephant yard,” Starkey said. “Lily and big brother Samudra were playing ‘King of the Mountain’ quite a bit. Our animal-care staff found the topdressing variety to be the most elephant-friendly, so that’s what we went with.”

Filling the entire Elephant Lands habitat—including all of the indoor elephant areas—to a depth of not less than three feet required 15,000 cubic yards of sand.

**Best foot forward**

While Lily, Samudra and the others obviously enjoy romping in piles of the stuff, this “true grit” is not merely intended to facilitate play. The sand’s higher purpose is to cushion and protect elephants’ feet, which have evolved to support their enormous weight over a variety of natural terrains. Maintaining healthy feet among elephants is one of the most important tasks for animal-care staff. And—as with most things elephant-related—it is an area in which the Oregon Zoo has led the way.

Older exhibits, particularly those constructed in the 1950s and ’60s, featured a lot of concrete, which is easy to clean and disinfect but can lead to foot problems in elephants. The Oregon Zoo pioneered the installation of elephant-friendly surfaces in the early 1990s and 2000s, retrofitting its Eisenhower-era facilities with natural substrates outdoors and 2-inch-thick rubber flooring inside.

In 1998, the Oregon Zoo hosted the first professional conference on elephant foot-care practices, convening veterinarians and elephant experts from around the world. Conclusions and recommendations from this conference were compiled in *The Elephant’s Foot* (Iowa State University Press, 2001), which now serves as a manual for zoos across the country. More than 40 of the foremost authorities on elephants and their feet—including Oregon Zoo veterinarian Mitch Finnegan and vet technician Margot Monti—contributed chapters on topics ranging from foot anatomy to treating ailments to nutrition, maintenance and record-keeping.
The Oregon Zoo’s famous family of elephants doesn’t know where its next meal is coming from. And that’s a good thing, animal experts say.

“In Southeast Asian range countries, elephants can spend up to 16 hours a day searching for food,” said Bob Lee, the zoo’s elephant curator. “They’re eating throughout the day, getting lots of exercise—that’s the kind of experience we thought about as we designed the new Elephant Lands habitat here at the zoo.”

Natural behaviors

To help encourage natural foraging behaviors, Lee said, the zoo took inspiration from a species that, like the Asian elephant, has a relationship with humans spanning millennia: the horse. In the equestrian world, automatic feeders have long given horse owners a convenient way to deliver multiple feedings per day, simulating the horse’s natural grazing patterns.

The feeders are equally adapted to suit elephants’ needs. A drop-down door lets animal-care staff stock each feeder with separate portions of hay, browse or other snacks. Each portion is then released according to a pre-programmed timer—and drops, vending-machine-style, onto a custom-made platform that the elephants can access with their trunks.

But unlike horses, which typically receive their hay at regularly scheduled times, the zoo’s elephant family doesn’t know when—or where—their food will drop. More than 20 timed feeders, strategically placed throughout the expansive Elephant Lands habitat, are programmed at unpredictable intervals to encourage natural foraging behaviors.

Food for thought

“If they come upon a feeder that hasn’t released anything yet, they’ll have to move along to the next one, and maybe the next one after that,” Lee said. “This not only keeps them moving and exercising throughout the day but it should also provide great mental stimulation.”

Keepers may find themselves equally engaged. With so many feeders spread out over more than six acres—each needing to be filled and programmed to release food at random, unpredictable intervals—feeding the zoo’s elephants is more labor-intensive and requires more thought than ever before.

“It will be worth it though,” Lee said. “We’ve learned a lot about caring for elephants over the past 60-plus years, and we’re grateful for the chance to put all that knowledge into this new habitat, which is going to make the lives of all the elephants so much better.”

A recent study assessing the welfare of elephants in North American zoos found that increasing an elephant’s exercise time, providing more frequent meals, and having unpredictable timing of those meals correlated with improved body condition.

“Our plans for Elephant Lands were already in motion when those results came out,” Lee said “But it was great to get that scientific validation for what we’re doing.”

bit.ly/ElephantAutomat
Polar bears like it cool, elephants like it warm and the Oregon Zoo likes it sustainable.

One aspect of Elephant Lands—unseen by zoo visitors—lets these two endangered species keep each other’s thermostats at comfy levels via an innovative high-tech system buried 12 feet underground. There’s also a “Slinky” involved.

It’s called a geothermal loop.

“Essentially, this system works the same way as your household refrigerator,” said Jim Mitchell, zoo construction manager. “The condenser that cools the coils in your refrigerator produces heat, which is expelled away from the coils with a fan. Our system has just added another step: capturing that heat for use elsewhere rather than blowing it all away.”

Heat is created as a byproduct of cooling the polar bear swimming pools at the zoo. And rather than just expel that heat, the geothermal system will direct it through rows of Slinky-like coiled pipes buried deep in the northern section of Elephant Lands.

The ground maintains a constant temperature, insulating the pipes. Then, when it’s time to crank the thermostat, pumps connected to the system will deliver heat to the 33,000-square-foot indoor portion of Elephant Lands.

The geothermal loop and other energy-efficient design systems are expected to cut Elephant Lands’ energy requirements in half, reduce greenhouse gas emissions by 40 percent and serve as the primary heat source for one of the world’s largest indoor elephant facilities.

Eventually, other renewable sources of heat will be fed into the geothermal system. For example, the roof at Forest Hall features a huge array of solar panels.

“Gradually, we may eliminate the need for fossil fuels at the majority of buildings and exhibits at the zoo,” Mitchell said.

An elephant-sized “air curtain” separating Forest Hall from the outdoor areas maintains a constant, comfortable indoor temperature for pachyderms while providing access to the rest of Elephant Lands’ 6-acre spread.

“The beauty of this system is in how it gives elephants choice,” said curator Bob Lee, who oversees the zoo’s elephant program. “Most of the time, the elephant family will be able to move freely indoors and out, and we’ll be able to sustainably maintain a comfortable temperature for them.”
Green Features

The Oregon Zoo strives to be a conservation leader in its day-to-day operations and in the construction of new facilities. Sustainable design practices abound in Elephant Lands, which has already earned awards for its environment-friendly design. The buildings are designed to meet the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) Silver certification—an internationally recognized benchmark for sustainable building practices.

Among the highlights:

**Improved stormwater management**

Rainwater collected from Forest Hall’s roof is stored in a 5,000-gallon underground cistern, reducing peak loads on the city stormwater system and conserving potable water use. The water is then used at Forest Hall for flushing toilets and wash down. It’s a large-scale version of having a rain barrel under your downspout.

**Geothermal “Slinky”**

An innovative geothermal system will direct heat created as a byproduct of cooling polar bear swimming pools through rows of Slinky-like coiled pipes buried 12 feet underground in the North Habitat section of Elephant Lands. The ground maintains a constant temperature, insulating the pipes, and pumps connected to the system will deliver heat to the indoor portion of Elephant Lands.

**Solar photovoltaic array on Forest Hall roof**

This array will generate around 20,000 kilowatt-hours a year of electricity for use in the building without releasing CO2 or creating hazardous waste.

**Solar hot-water system**

This system preheats water for elephant bathing and other uses, storing it in a 1,500-gallon tank in the building’s mechanical room and reducing the amount of natural gas required to heat the water.

**Natural ventilation mode**

Large louvers on the walls and roof of the indoor facility open automatically based on outdoor temperatures, allowing natural ventilation. About 75 percent of the building’s fan power is eliminated during natural ventilation mode.

**Cross-laminated timber (CLT)**

The zoo’s Elephant Plaza building took runner-up honors for Sustainable Project of the Year in the Portland Business Journal’s 2015 Better Bricks awards. The building was the first commercial project in Oregon to use cross-laminated timber, a material made from planks of wood cross-hatched together into large sheets. Steel and concrete take a lot of energy to produce, and CLT—which stores carbon—can have a positive environmental impact over the life-cycle of a building.
Elephant Lands is raising the bar for elephant care across the country—but not everything noteworthy about the huge new habitat has to do with elephants.

Oregon’s Percent for Art legislation ensures a portion of all eligible publicly funded construction projects is spent on public artwork, and that includes work funded by the community-supported zoo bond measure passed in 2008.

One fascinating result for zoo visitors is “Forest Lights,” a site-specific installation of wood, steel and color-shifting glass by Boston-based artist Catherine Widgery, who won a commission to develop two large-scale works at Elephant Lands.

Widgery, who grew up amid the forests and greenery outside Pittsburgh, infuses her art with a sense of both natural wonder and urban industrial culture. She and her team have built more than 40 site-specific public art projects across North America, including the acclaimed “Leaves of Wind” bus stops that debuted recently in El Paso, Texas.

For Widgery’s first Elephant Lands project, workers affixed long, slender vertical sculptures evoking a bamboo forest to the façade of Forest Hall, the zoo’s new state-of-the-art indoor space. Then Widgery visited the zoo to oversee the addition of dichroic glass panels, a common element in her art.

Made by sandwiching micro-layers of metals and oxides between layers of glass, the material displays one of two different colors depending on light conditions and the angle of view, creating a dramatic ever-changing interplay of light between the sun and glass.

The second part of Widgery’s commission consists of three vertical towers in the area separating Elephant Lands from the zoo’s central lawn. Influenced by Asian culture and design motifs, these towers also include fragments of reflective glass, casting rainbow-like colors onto the surrounding landscape.

“The towers use a similar language of materials as the Forest Hall façade,” Shelby said. “But they are rooted in cultural meanings rather than being about the landscape or foliage.”

“Catherine’s a very accomplished public artist with work around the globe,” said zoo project manager Brent Shelby. “For the most part, the zoo’s public art collection has been pretty Northwest-centric, and this was a chance to expand the collection and include artists from outside the region.”
If there were an elephant capital of North America, it would likely be located at the Oregon Zoo. The zoo has been a pioneer in elephant care for more than five decades, and much of its history is intimately intertwined with elephants. Many important zoo milestones involve these gentle yet giant creatures, which have inspired generations of visitors while helping scientists and researchers make important breakthroughs—discoveries that have helped us better understand and protect elephants around the world.

In the late 1950s, the zoo's first vet, Matthew Maberry, was part of a team working to design new facilities that provided elephants with much more freedom than was common in zoos at the time. These facilities, built in 1960, allowed for normal social interactions and natural breeding among the elephants. Elephants were not chained indoors overnight as they commonly were in other zoos at the time. The unprecedented freedom led to an extraordinary string of successful pregnancies and births.

How extraordinary? For the first eight decades of the 20th century, right up through 1980, just 28 Asian elephants were born anywhere in North America. Nineteen of those—more than two-thirds—were born in Portland. Of the nine born elsewhere during this time, the infant mortality rate was 100 percent: From 1900 to 1980, not a single Asian elephant born anywhere on the continent—except for Portland—survived to one year of age. It is easy to understand how Portland’s zoo gained a reputation as “the elephant zoo.”

“These were completely uncharted waters,” said Bob Lee, the zoo’s elephant curator. “Before Packy arrived in 1962, just one elephant had been born in any North American zoo—that was in 1918, and he lived for just a few weeks.”

Packy

For three months before Packy’s birth, the elephant barn buzzed with reporters, looking like extras from an early 1960s film—playing poker, smoking, sleeping on hay and waiting. By the time Packy’s mother, Belle, went into labor, many reporters had given up. Belle’s pregnancy delivered Packy to us, of course. It also taught the wildlife community that an Asian elephant’s gestation lasts around 22 months.

In the 20 years following Packy’s birth, the old barn yielded new discoveries with each elephant birth—the elephant estrous cycle, the age at which males reach sexual maturity, etc.—but there were still surprises along the way. On one occasion, keepers arrived to find a wobbly calf born the night before.

Early years

“If you look back at those early years—the 1960s and ’70s and even into the ’80s—it’s not all pretty,” Lee said. “There was inbreeding, some elephants were sent away to circuses. The things that are obvious to us as animal-care professionals today were unknown to—or rather first learned by—the people who worked here 35 or 40 years ago. It’s hard to look back at some of that history, knowing what we do now. It’s tempting to say, ‘You should have known better’ or ‘You should have done things this way.’ But what we need to realize is the folks who were here back then had literally no experience to draw from. If you think about the time when Packy was born, it’s mind-boggling—Kennedy was president, the Beatles hadn’t made any records yet, cigarettes didn’t have warnings from the Surgeon General. It was a different era. They were writing the book on elephants as they went.”
Zoo evolution

In the 1970s and ’80s, zoos began to transform, evolving from the menageries of old into the hubs for conservation and education we see today. Significant milestones influencing the mission of zoos included the passage of the Endangered Species Act in 1973, and the process of accreditation by what is now the Association of Zoos and Aquariums. In 1974, the Oregon Zoo became just the second zoo in the country to earn AZA accreditation. AZA’s Species Survival Plan program was established in 1981, and the SSP for Asian elephants came in 1985. This all transpired during an era when people were learning more and more about elephants.

One important lesson—which seems obvious today—is that elephants thrive when they live in family herds. Under natural conditions, female elephants spend their entire lives together. Elephants in herds spend a surprising amount of time in physical contact with each other. They work together, foraging for food and raising young.

“Elephants are so family-oriented,” Lee said. “We know that now. Belonging to a multigenerational matriarchal herd and participating in the raising of young—with male elephants coming in and out of the herd at different times—stimulates and motivates each member of the herd physically, emotionally and psychologically.”
**Groundbreaking discoveries**

While its elephant births have earned it an international reputation, the zoo has also participated in groundbreaking elephant research. Discoveries made here have profoundly improved our ability to understand and protect these endangered animals. In the 1970s, researchers at the zoo learned how to determine the estrous cycle of female elephants, one of the most important keys to understanding elephant reproduction. And, while observing the zoo’s elephant herd in 1984, scientist Katherine B. Payne discovered that elephants use infrasonic communication, producing sounds outside the range of human hearing. This along with other zoo research has been applied in Asia for proactive elephant management around developed areas, reducing human-elephant conflict.

Recently, the Oregon Zoo partnered with several North American zoos and universities to conduct a new study of elephant welfare, one of the first major research projects to look at positive indicators of elephants’ well-being—in essence, signs that an elephant is mentally and physically fit. The zoo also continues to track progesterone levels in its female elephants to better understand elephant reproduction. The progesterone information collected at the zoo is now the largest long-term data set about elephant estrous cycles in the world.

**Leader in elephant welfare**

In addition to such research, the Oregon Zoo has played an important role in implementing the highest standards of care and management for elephants. Through its AZA affiliation, the zoo has hosted a variety of conferences and events—like the first and second North American Conferences on Elephant Foot Care and Pathology and the fifth International Elephant Research Symposium—gathering elephant experts from across the country and around the globe. The zoo participates in these events to ensure its herd benefits from the most current management practices regarding diet, exercise, enrichment and health care.

**A transformation**

Looking back at the zoo’s long history with elephants, Lee feels proud to work for an organization that has been so crucial to developing the science behind today’s elephant welfare practices.

“We’ve had successes and failures over the years,” Lee said. “And the great thing is that we have talked openly about both. We’ve shared all our experiences with other zoos and researchers, both the things we did well and the things we didn’t. It’s been so gratifying to be able to put all that collective knowledge into Elephant Lands, and now to watch it transform from designs on paper and artists’ renderings into actual physical reality.”
Getting to know the Herd: The Bulls

The Oregon Zoo is home to six Asian elephants: two males and four females. Like members of a family, each elephant has its own personality and its own story.

The Bulls

Packy

At 53, Packy is the oldest male of his species on the continent and a bona fide Portland celebrity. When he arrived on April 14, 1962, he was the first elephant born in the Western Hemisphere in 44 years, and it made front-page news across the country. Today, he is the connection between the old and the new. Elephant Lands was designed specifically with him in mind—both as a comfortable home for him to live out his golden years, and as a legacy to all he has helped us learn about Asian elephants. But Packy—notoriously reluctant to try anything new—will be exploring it at his own pace. It took six days, 400 pounds of carrots, a ton of sweet potatoes and an equal measure of encouraging words, before the famously change-averse elephant decided to check out the new indoor portion of Elephant Lands—a week behind the rest of the zoo elephant family, but right on time as far as keepers were concerned.

Samudra

Rose-Tu’s first calf, Samudra, is 7 years old and beginning to learn the ropes of adult life in the herd. Born on Aug. 23, 2008, Samudra now tops 5,500 pounds but is still as playful and curious as when he was a young calf. He was the first third-generation elephant born in the United States. Samudra (Hindi for “lord of the ocean”) was named by 17,000 voters because of his love of water.
Getting to know the Herd: The Cows

The Cows

**Rose-Tu**

Playful and highly intelligent, Rose-Tu is one of the most popular elephants in the herd. Born at the Oregon Zoo in 1994, she was considered one of the feistiest babies keepers had seen—a trait she seems to have passed on to both of her calves. Now 21 years old, Rose-Tu is still playful but has also matured into her role as the mother of the zoo’s third-generation elephants, Samudra and Lily.

**Lily**

Lily was born big, with an outsize personality to match. The youngest member of Portland’s elephant family was a hefty 300 pounds when she was born on Nov. 30, 2012, and she now weighs nearly nine times that much—around 2,700 pounds. Described by keepers as a “spitfire,” Lily has energized the rest of the herd, competing with the bigger elephants for enrichment items, and bellowing at the top of her lungs when she wants the others to come play.

**Sung-Surin**

Sung-Surin’s name is Thai for “sunshine,” and she is often simply called Shine. She was born Dec. 26, 1982, at the Oregon Zoo. Sung-Surin shares many characteristics with her father, Packy. Her personality is nearly identical to his, and she also inherited Packy’s height. She is the tallest female elephant at the zoo and weighs about 8,000 pounds.

**Chendra**

Chendrawasih—Chendra for short—means “bird of paradise” in Malay. Chendra arrived at the Oregon Zoo on Nov. 20, 1999, from Sabah, Malaysia, where she was born in 1993. Wildlife officials had found her—orphaned, alone and hungry—near a palm-oil plantation on the island of Borneo. She had wounds on her front legs and left eye, which ultimately left her blind in that eye. Because of the injuries and her age, Chendra was a poor candidate for relocation and release back into the wild. It was clear she would always be dependent on humans for her survival, but she has benefited greatly from being a member of the zoo herd. Chendra is the smallest elephant at the zoo, weighing “only” around 3,500 pounds.
Conservation: Our Work Doesn’t Stop Here

Our work doesn’t stop here in Portland. The Oregon Zoo’s commitment to Asian elephants extends to range countries, where this incredible species faces tremendous pressure. Through the International Elephant Foundation and the Oregon Zoo Foundation, the zoo funds projects to stop poaching, conserve habitat, and reduce the conflicts with humans that pose the greatest threat to Asian elephant populations.

Endangered in the wild

Asian elephants are considered highly endangered in their range countries. It is estimated 40,000 remain in fragmented populations from India to Borneo.

Once abundant throughout Southeast Asia, these elephants are now found only in small pockets of remaining wild habitat widely dispersed across 13 countries (see map).

Illegal encroachment and forest degradation have intensified the conflict between rural people and elephants, sometimes even in protected areas. Many of the elephants’ roaming pathways are now fragmented, breaking the once wide-ranging elephant population into smaller, more isolated groups and threatening their survival.

Supporting survival

Through the International Elephant Foundation and the Association of Zoos and Aquariums, the Oregon Zoo supports a broad range of elephant conservation efforts. In 2015 alone, the zoo is supporting projects to:

- **Mitigate human-elephant conflicts** by providing safe transportation in Sri Lanka.
- **Operate Sumatra elephant conservation response units**, employing once-neglected captive elephants in direct field-based wildlife conservation.
- **Develop an elephant conservation center** in Myanmar.
- **Identify elephants in conflict with people** using molecular techniques.

In addition to these IEF programs, the zoo has ramped up efforts to combat the illegal ivory trade by partnering with the Wildlife Conservation Society on its 96 Elephants campaign. Over the past two years, the Oregon Zoo Foundation has provided $20,000 to the campaign, which supports park guards, intelligence networks and government operations in protected areas for elephants throughout the Congo Basin and East Africa, among other projects.

The foundation has also committed more than $30,000 over three years to support the Forest Elephant Project—an innovative approach to protecting Borneo’s last elephants led by the Borneo-based conservation organization HUTAN, the Sabah Wildlife Department, Danau Girang Field Center and the communities of Kinabatangan.
Asian Elephant Fact Sheet

**Scientific name**

*Elephas maximus*

**Range and habitat**

Asian elephants live in Southeast Asia in a wide range of habitats, from thick jungle to grassy plains.

**Average size**

Weight: 6,000–13,000 pounds  
Height: 7–10 feet at the shoulder

**Description**

Asian elephants are shorter and stouter than their African counterparts. Asian elephants are also distinguished by rounded backs, small ears and relatively smooth skin; African elephants have dipped backs, large ears (shaped like the African continent) and very wrinkly skin.

Trunks: Elephants use their trunks to communicate, touch, eat, drink and smell. This versatile body part has hundreds of muscles and is amazingly strong and flexible—it can lift heavy logs or pluck a single leaf from a tree. Elephants can even use their trunks like snorkels to breathe underwater.

Tusks and tushes: Some male Asian elephants have tusks, long incisors that grow up to 5 feet. Most females and many males have tushes, which are much smaller and lack a central nerve (unlike tusks).

**Diet**

In their native range countries, these herbivores eat bamboo, fruit, leaves, shoots and grasses. The Oregon Zoo’s elephants eat fresh produce, hay, oats as well as seasonal veggies and plant clippings.

**Behavior**

Asian elephants are highly social animals that form strong bonds with other herd members. Females and calves live in multigenerational, matriarchal herds, while adult males spend some time away from herds and some in “bachelor” herds.

**Reproduction**

Males reach sexual maturity at 8-12 years and females at 6-10 years. Females usually give birth to a single calf after a gestation of 20–22 months. During birth, the mother is attended by other adult females (“aunties”).

**Status in the wild**

Asian elephants are listed as endangered under the U.S. Endangered Species Act, CITES Appendix I and the IUNC’s Red List. The Association of Zoos and Aquariums coordinates an Asian elephant Species Survival Plan, of which the Oregon Zoo is a participant. The species is threatened by habitat loss, poaching and fatalities stemming from conflicts with human activities like agriculture.
See More

These and other images are available in high-resolution format for press in a Dropbox gallery at bit.ly/ElephantLandsPhotos.

Contact zoo media relations officer Hova Najarian at 503-220-5714 or hova.najarian@oregonzoo.org to request additional photos and videos or to schedule an interview with zoo staff.