

# Catching the 'big one'

*means saving thousands more fish  
for Nevada scientists*

By John Trent '85/'87, '00M.A.

**B**oth Sudeep Chandra and Zeb Hogan can trace the beginnings of what they do today to what they did years ago, as children growing up in different parts of the country.

For Chandra, it was the creek running in the backyard of his childhood home in Norman, Okla.

"We'd go out and catch catfish in the backyard," Chandra, an assistant professor in the Department of Natural Resources and Environmental Sciences, says. "At the time, I remember thinking, 'Uh, I don't want to catch catfish or bass.' But that surely must've left an impression on me. It had to."

For Hogan, who spent his college summers as an undergraduate at the University of Arizona as a field technician for the Arizona Fish and Wildlife Research Cooperative, the

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first connection with the natural world and wanting to learn more about it began much earlier.

"When I was a child, I used to tape nature shows on television and then watch them early in the morning, before anyone else in my family woke up or wanted to use the TV," he says.

From those first vivid experiences — a time of discovery and wonder that all children experience, but then, more often than not, lose to the pressures of adulthood — has come one of the University's most productive research partnerships.

It is a partnership that has not only garnered the University headlines in publications



Photos Courtesy of Zeb Hogan

*Nevada researcher Zeb Hogan has traveled throughout the world to help save freshwater fish, including the Mekong fish.*

such as *The New York Times* or on television on *National Geographic*, but promises something far more lasting for the freshwater fish of the world, as well as for the fish of Lake Tahoe and the Truckee River.

Working in concert, Chandra and Hogan are in the midst of a three-year project that focuses on the study and conservation of the world's giant freshwater fish. In all, the project will include expeditions to about a dozen of the Earth's most diverse freshwater ecosystems.

The two youthful researchers — both are in their early 30s — have known each other since their days of taking graduate courses together at UC-Davis more than decade ago. They are collecting information about the life history, population status, geographic range and threats associated with each giant fish species. They will then synthesize this information into assessments and analyses of population and distribution trends over time.

The fish they are studying include the mightiest of them all, the Mekong giant catfish, officially the world's largest river fish. The Mekong catfish has tipped the scales at more than 660 pounds and can grow to more than 10 feet long. It is part of the world's most productive freshwater fishery, which stretches for more than 2,600 miles along the Mekong Delta in Cambodia. Not surprisingly, because of the impact of native fishermen — the fish is a prime food source for the people of the Delta — the Mekong catfish has been categorized as "critically" endangered by the World Conservation Union.

"Freshwater biodiversity conservation — including animals like the Mekong catfish, river dolphins and otters — is every bit as important as the protection of animals like tigers and whales, perhaps more so," says Hogan, a United Nations Councillor for Fish and assistant research professor in natural resources and environmental science at the University. "This project will also allow us to also meet with scientists and fishermen, participate in biological studies and inventories, talk with local people about their unique way of life, and investigate the causes behind the global loss of freshwater biodiversity."

For people living in Reno, the connection between a freshwater fishery such as the Truckee River and one in Cambodia might seem tenuous.

Not so, according to Chandra.

Chandra says some of his work at Lake Tahoe — where he has studied how non-native species such as the Mackinaw have impacted the ecology of the lake — can provide impor-



Photo Courtesy of Zeb Hogan

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tant context in understanding the connection.

“Our lessons from Tahoe can be transferred to a river or lake in Mongolia or Russia, where we have a project designed to conserve the world’s largest trout, which is up to seven feet long and more than 200 pounds,” he says. “We can go there and say, ‘We can help you recover or protect your river. Here are some lessons learned from our studies at Lake Tahoe or on the Truckee River that might help protect your river, its water quality and biodiversity, as you develop the watershed.

“And, the reverse can also be true. We can take lessons learned from how a system works in its entirety, a system that has had some minor disturbances in a far-off place and then come back to Nevada and say, ‘This is what our systems in Nevada must’ve looked like 150 years ago before there were major alterations to our landscape from mining and overgrazing, and this is how we can restore them.’”

Improving the world’s biodiversity, or at least maintaining what already exists, are both important goals for the researchers. For Ho-

gan, the freshwater fish study is an opportunity to shed light on an issue with life-altering implications for millions of people.

“I’ve had two major sources of funding move away from biodiversity study and conservation to focus on global warming issues,” he says. “In practical terms, it means

### **SAVING THE WORLD’S FRESHWATER FISH**

University researchers Zeb Hogan and Sudeep Chandra and Laurel Saito, assistant professor in the College of Agriculture, Biotechnology and Natural Resources, are involved with a number of efforts to save the world’s freshwater fish. Much of the work is done through the University’s Aquatic Ecosystems and Analysis Lab in the college.

Chandra added that a scholarship fund has already been established. For more information, or to make a contribution, contact Jean Carbon, director of development for the College of Agriculture, Biotechnology and Natural Resources, Mail Stop 222, Reno, NV 89557, or phone 775-784-4390.

that there is no longer anyone actively funding ecological work on the endangered fish species of the Mekong.

“For readers in Nevada, this may not sound so surprising, but when you consider that the Mekong River is the most productive freshwater fishery on earth, supporting more than 60 million people, the lack of focus on the ecology and conservation of Mekong fish is shocking.

“This same situation is being played out in many poorly studied aquatic systems worldwide.”

Hogan, a former World Wildlife Conservation Fellow, likens the huge fish he studies to “gentle giants.”

“Despite their size and tremendous strength, the giant catfish isn’t an aggressive fish,” says Hogan, who also has a role in three of Chandra’s studies with direct ties to Nevada. “It is a toothless algae eater that, left unmolested, is shy and avoids confrontation. I am always shocked by their gentleness

Continues next page

and calm, yet ferocious power when they're startled or netted."

Chandra, like Hogan, views his work through two different prisms: both as a human being and as a scientist.

He answers the question of why it is important to see if the Lahontan Cutthroat Trout can be successfully reintroduced in the Tahoe-Truckee-Pyramid watershed in a thoughtful, more-than-simply-science way.

"Why do we care about our natives like the Lahontan cutthroat trout?" he asks. "One might be a moral issue. From a more spiritual or religious aspect, if they are creations from some sort of higher being, then they're very special. We have to ask ourselves, 'Do we want to lose them?' That's a personal question.

"There is also the more scientific ques-

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**The Mekong catfish has tipped the scales at more than 660 pounds and can grow to more than 10 feet long.**

tion, as it applies to the fact that there is great biodiversity loss happening globally right now. Biodiversity is believed to affect how ecosystems function; it's the way systems purify and handle issues that are thrust upon them. One of the reasons why we need to think about reintroducing the cutthroat trout is it's an important fish that can help regulate components of the river such as fish and nutrient cycling. If we want our systems to function more naturally, then we want our native fishes to return."

It is this type of gentle sensibility that makes Chandra and Hogan's work so special — the classic intersection between the duty of a scientist to further knowledge and the duty of a concerned citizen to take meaningful action.

"That's why I think it's such a good partnership," Chandra says. "The interesting thing about Zeb is, he's got knowledge and expertise not only about large fish biology, but in something just as important: he's got a knack for picking up on cultural nuances and putting the science in the context of conservation and recovery.

"I'm a limnologist, which is more or less a freshwater oceanographer; I'm constantly thinking about how the chemical, physical, biological and geological aspects of our rivers and lakes interact. So I end up crossing over and trying to integrate many disciplines. Zeb can come at a problem as a knowledgeable scientist but with a cultural touch to ask the question, 'But what does the fish mean to this culture?'"



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