**Transcript**

**Taking inventory of the earth. I'm Bob Hirshon and this is Science Update.

Scientists have identified about 1.7 million plants, animals, and microbes. It sounds like a lot, until you realize that's less than ten percent of all the species that actually exist on earth.

Kevin Kelly is co-founder and board chairman of the All Species Foundation in San Francisco. He says they're looking to discover, identify, and catalog every species on earth within the next 25 years. They're drawing on the help of professional biologists as well as trained amateurs.

Kelly:**
Part of our goal is to actually increase the abilities of countries around the world to train more people, both professionals and the parataxonomists to go out and do this.

**Biologist and board member Peter Warshall says that new technologies, like DNA analysis techniques, will help keep the effort on pace.

Warshall:**
And it might be possible in five years, for instance, just to dip a root of a plant or a leg of a grasshopper into a small machine and come out with a temporary DNA definition of is it a new species or not.

**Eventually, the group plans to make all the information publicly available—by giving every species its own website. For the American Association for the Advancement of Science, I'm Bob Hirshon.**

**Making Sense of the Research**

A list of all the species on the planet is quite a big list. If the number of species Kelly's team expects to find is even [close](http://sciencenetlinks.com/science-news/science-updates/all-species-inventory/) to being right, then just a list of the names, printed out in 12-point type on standard paper, one name per line, would take up over 370,000 pages.

So why go through all the trouble? Well, for starters, the number of species on earth is rapidly diminishing. It's thought that species are constantly disappearing from the planet that humans have never even identified. Knowing exactly what's here will give us a better idea of what we're losing—and how our actions as human beings really affect the creatures we share the planet with.

But the way scientists keep track of species now is like a big business that still keeps all its books in big handwritten ledgers. There's no centralized database of all the species that we know of. If someone thinks they've found a new species, they have to dig through taxonomy books to try and figure out if someone else has found it first. At the rate we're going, Kelly estimates that it will take between 600 and 1,000 years to catalog all the species we have. A comprehensive, Web-searchable database would let scientists and amateurs verify and record their new discoveries far more quickly and easily. Plus, all the pertinent information about a species—where it lives, what it eats, what its predators are, and so on—could be held in the same place.

Of course, there are problems. One of them is the cost: this project will require billions of dollars in investment from countries around the world. There also aren't nearly enough trained researchers to find all the new species, especially in developing countries, where the diversity of life is the richest. As Kelly points out, the All Species Foundation hopes to issue grants to help train new amateur taxonomists, but that alone is a big undertaking.

Finally, there's the complexity. In order to find all the species on earth, you've got to look everywhere on earth, and some places are a lot easier to get to than others. It's easy enough to search a meadow in Iowa, but what about the bottom of the Pacific Ocean? A cave in a remote part of South America? What about cataloguing all the bacteria inside the gut of a rare African termite? In order to pull this off, scientists are going to have to come up with an organized way to scour the planet for undocumented life forms.

Kelly says there are a number of possible strategies. One is to simply divide up the globe like a grid and move from one area to the next systematically. For now, though, the Foundation hopes to start by choosing small, manageable areas that people are already somewhat familiar with, and concentrating as much effort as possible on documenting every species within those areas. Once they see how many new species turn up there, they can use that experience to guide them through more uncharted territory.

Now try and answer these questions:

1. What reasons are there to take an All Species Inventory?
2. What are some of the obstacles to completing this project?
3. Scientists estimate that humans have identified only about 10% of the living species on earth. How do you suppose they arrived at this figure, without ever having seen these undiscovered species?
4. If a species hasn't been identified by humans yet, is it important to know it's there? How can we be affected by living things that we aren't aware of?
5. There are similar projects underway in other fields, like a catalog of all the stars in the visible sky and the Human Genome Project, which aims to identify all the genes in the human body. Why do you think scientists are so interested in creating these kinds of records at this point in history?