News via Wired.com: How the U.S. Maps the World's Most Disputed Territories

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How the U.S. Maps the World's Most Disputed Territories

BY GREG MILLER
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When the United States decides to recognize a new government, or an existing country changes its name, Leo Dillon and his team at the State Department spring into action.

Dillon heads the Geographical Information Unit, which is responsible for ensuring the boundaries and names on government maps reflect U.S. policy. The team also keeps an eye on border skirmishes and territorial disputes throughout the world and makes maps that are used in negotiating treaties and truces. These days, Dillon says, maritime borders are where much of the action is. (The recent political squabbling and military posturing between China and Japan over the tiny islands known as Diaoyu in China and Senkaku in Japan is one potentially worrisome case in point.)

Dillon's been at the State Department since 1986, and he says his job remains as fun as ever. "The landscape of political geography is constantly changing," he said. "Every day I come in here and there's something new." We spoke with Dillon to learn more about it.

WIRED: What's an example of an interesting border dispute you've worked on?

Leo Dillon: One case I worked on that was kind of fun involves a tiny island off the coast of Morocco. It's very close to shore and very, very small. But about 11 years ago Morocco sent a few troops there and Spain swooped in with helicopters and expelled them and it became a big deal.

[Then-Secretary of State] Colin Powell was asked to mediate the conflict. [In Powell's plan] everyone was going to leave the island, with no prejudice as to who it belonged to. They drew up an agreement but the problem was the name. The Spanish wouldn't use the Moroccan name and the Moroccans wouldn't use the Spanish name.

I was at a dinner party that Saturday night and I got a call from the Secretary's staff saying that instead of a name they wanted to use the coordinates for that island. So I showed them how to get on a database and do that. I could hear the Secretary in the background saying, "Ask him how accurate those coordinates are." They're not totally accurate, but there's no island nearby with which it could possibly be confused. So the documents he drew up for the mediations referred to "the island and such and such coordinates" and those documents had to be signed by the prime minister of Spain and the king of Morocco by midnight that same day.

The prime minister of Spain signed, no problem. But they had to send a high speed car looking for the king of Morocco. This was in the days before cellphones were prevalent. So they caught up to him and he basically had to pull over at some house and say, "Excuse me, I'm your king,

could I use your phone?" He called up Powell and asked him to read the document, which he immediately agreed to. So that was a big deal, and my small part in it was to provide those coordinates. It's a great example of how geographic names matter.

WIRED: Where do geographic names come from in more ordinary circumstances?

Dillon: What we're looking for is names that are used officially or names that are used locally. Actually, officially usually trumps locally. Ninety-five percent of the names in our huge database come from official maps, and maybe five percent require special treatment. That's where I come in quite often and investigate.

Especially in places like Asia or Africa it comes up because sometimes there's a typo on a map or something doesn't look quite right. A good example is a Syrian town near the border with Turkey. It's an important town that's been in the news a lot. Most people call it A'zaz, but then I noticed our staff had changed it to I'zaz because there's a large scale map that spells it that way. And some local people apparently do call it I'zaz. But almost everybody calls it A'zaz, and I had to build a case using everything from Syrian websites, to reputable atlases like *National Geographic* to internet sources.

WIRED: What happens when a new country comes up? Does that trigger a lot of work for you?

Dillon: It sure does. Every time a new country comes by it shakes up the order. Usually you have a lot of advance notice, but it still gets complicated. For instance, when we recognized Kosovo there were many sets of boundaries. The peacekeeping forces there were using boundaries that weren't really the legal boundaries at all. Their job was to keep peace in a buffer zone, so they'd set up working boundaries in a way that made it easier for them to keep people with guns apart. We were going with the largest scale available map, in this case a series of Yugoslavian-made maps in the Library of Congress. But it took a while to explain to people why we had the boundary the way we had it and what we were basing it on.

The names were an issue too. Before, Serbian names were all we used, but now the State Department said we can't do that, we have to use both Serbian and Albanian names for each and every town and feature. We had to go chase down an authoritative source of Albanian place names, which had never really existed. The Kosovars did a reasonably good job of tracking them down. But then we had to make a basic reference map, and I couldn't include as

many towns as I wanted to because I couldn't fit all the labels.

The other problem from our perspective is that a new country makes all the old reference maps obsolete. The other day I was asked for a good page-sized map of the Central African Republic because things are going on there. We have one produced in 2004. Well, it's no good anymore because it doesn't say South Sudan.

WIRED: What kinds of information do you use when you're working on a border dispute?

Dillon: It's mostly whatever commercial satellite imagery we have available. Honestly, these days it's a lot of good old Google Earth. We prefer commercial because it's neutral. But we also use terrain data from SRTM [the Shuttle Radar Topography Mission] or LIDAR or whatever else we need.

In one case, my colleague went to the capitals of both Kosovo and Macedonia. Formerly they were two states in Yugoslavia. Their borders weren't all that properly defined, and they needed to normalize their borders to have proper diplomatic relations. But they were very mistrustful of each other. He showed up with some Google Earth and Landsat images and showed them that there was this ridge line. He showed them that it's not a big deal, you might have to give up an acre here or there, but if you just follow the ridge line that's where the boundary should be. And they agreed. So it was a kind of technical solution to a politically charged situation. It worked out very quickly.

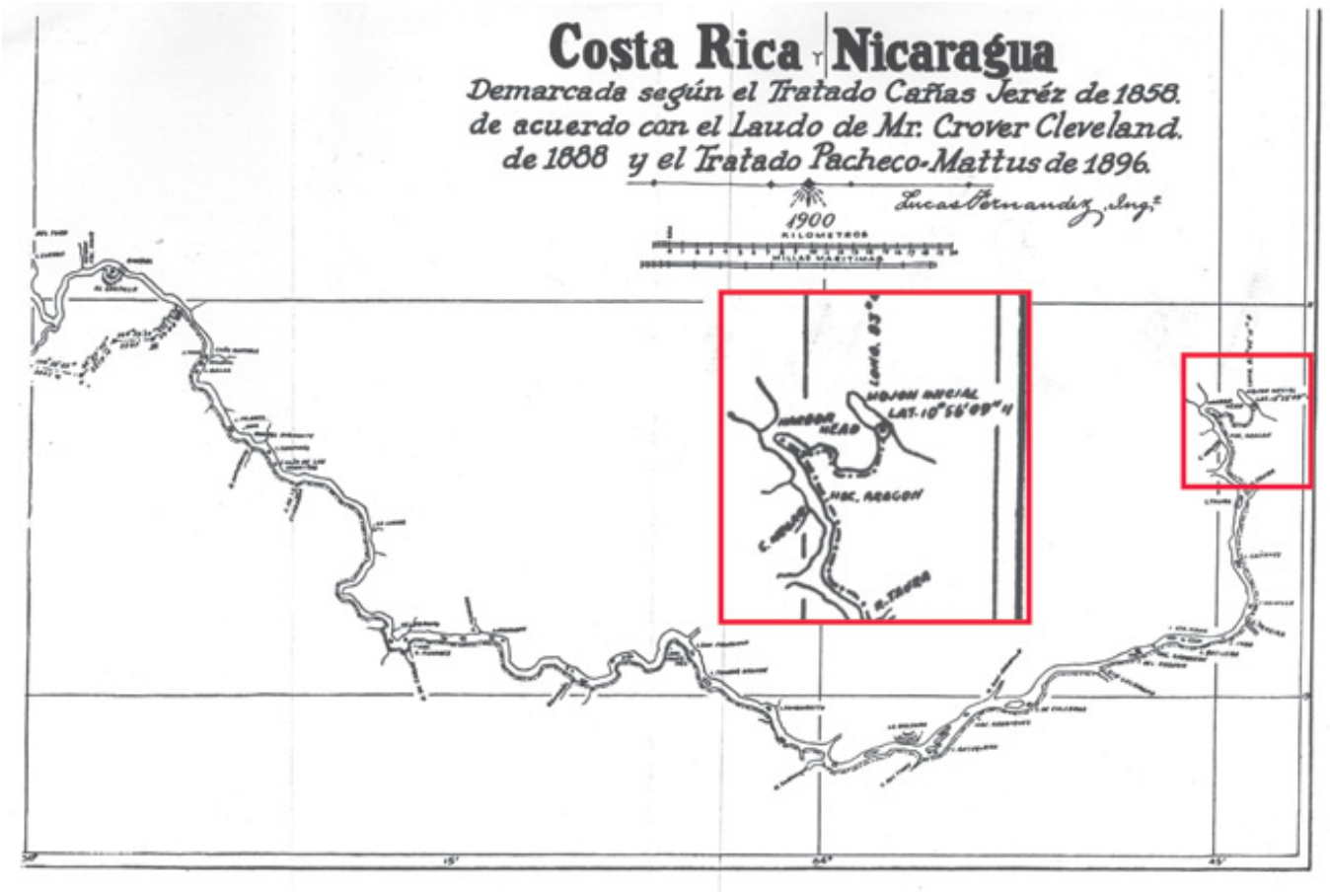
WIRED: Do you ever go to a place and survey a disputed border?

Dillon: No, we don't do that. That's not our job. Instead we try to act as a good faith broker between two parties, and we only do it if they both ask us. That's what happened in Kosovo-Macedonia. We also helped out in Azerbaijan-Armenia and Ethiopia-Eritrea.

WIRED: Do you ever use historic maps?

Dillon: All the time. A good example is during the Iraq war. Our embassy staff were trying to negotiate with the Kurds in the north, and the Kurds were saying these lands used to belong to us, and our folks there had no way of knowing if that was true. I got tasked with finding old maps that would corroborate what these guys are saying. So I went to the Library of Congress and found old maps of the area. I was able to make copies and georectify them and put them up against Kurds' claims, and that was used as a negotiating tool. Our folks were able to say look, you said this whole area used to be in this particular province, but you can see here that only half of it was. And they'd say, "Oh yeah, maybe you're right."

One of my colleagues is working hard now on India and China, which is one of the few borders that never really had a solid treaty behind it. He's got all these detailed maps from both sides, and he's trying to work through the differences. He's found areas where the British surveyors on the Indian side made mistakes. He's basically doing detective work, where he can say it's obvious they had a guy on this ridge line and another guy on this ridge line, but there was a valley in between they couldn't see, so they basically drew a line where they shouldn't have.



WIRED: Do you work with a lot of classified maps?

Dillon: Most classified maps we deal with are something that's going on at a given time. They show the movement of rebel groups or narcotics or something like that. But they're ephemeral. I don't like to make them because why make a map that only a small number of people will see and is only useful for a short time?

WIRED: Where are some of the current hot spots in terms of border disputes?

Dillon: Maritime borders are really where the hot spots are right now. The South China Sea is huge right now. You've got all these tiny islands there that are claimed by various actors. In the eastern Mediterranean there's all these complicated maritime agreements that some states recognize and other states don't.

As people are trying to exploit resources in the sea it's getting more and more important for them to be able to delimit the areas of sovereign rights. You have what's called your territorial seas, which is 12 nautical miles [off the coast], then you have your exclusive economic zone which is 200 nautical miles, and you even have certain rights to what's called the extended continental shelf which goes beyond 200 nautical miles — if you can define it. Some states are trying to do that responsibly using international law, and some states are not doing it responsibly.

WIRED: How does defining maritime borders differ from defining land borders?

Dillon: Maritime boundaries are actually simpler. Most people agree on a principle of equidistance, so you just have to get together and agree on a distance. You take an island or a coastline and start drawing concentric circles out and find a midline between them. But there are disputes all the time. Burma and Bangladesh took a case to the International Court of Justice recently. Chile and Peru is another case we're really watching. A decision could be out any day.

WIRED: Is climate change creating new areas of dispute?

Dillon: Sea level rise is going to play an enormous role in coastal states. People who are trying right now to negotiate their maritime boundaries with a neighboring state have to take that into account. If you chose a spot right now that's the terminus of your land boundary and you move it out 12 nautical miles, and your shoreline is very shallow, you may find yourself in 100 years with your land terminus underwater.

WIRED: Have open access cartography tools like Open Street Maps impacted your work?

Dillon: In a way, yes. Not so much with boundaries because boundaries are legal instruments. Anybody can put down a boundary in OSM but nobody's going to pay attention to it because there's nothing backing it up. But in the realm of names, definitely so. People are putting down names in OSM that are quasi-official or not official or local, and those are very interesting. We look at them and we collect them.

Before the internet, we had a much easier time defending the names we used because we were considered much more of an authority. Now, if you want to find out how to spell a town in an Arabic country, if you go to Wikipedia you may find a name that's more commonly used on the ground. It's something we're having a hard time keeping up with. The democratization of cartography, much like the internet as a whole, has opened up the world of geographical knowledge to a much bigger degree.