

New Global 1 km Population Projections Released to Advance Climate and Health Research (Version 0.2)

Google NotebookLM/WorldPop, 12 November 2025

Transcript

Speaker 1: Welcome back to the Deep Dive. If you've ever wondered about the long term future, well today we're digging into some really detailed new global population projection data.

Now, just before we get started, a quick heads up everything you're hearing today, it's actually AI-derived. We're built from source material that WorldPop uploaded and importantly, the audio itself has been carefully edited, checked and fully validated by the human experts back at WorldPop. So, rest assured on that front.

Speaker 2:

Right. And our source material today is a brand new open access data set. It's from WorldPop and it was released as part of the Wellcome Trust funded FuturePop project. We're looking specifically at their early version 0.2 projections. These map out detailed population changes starting from 2025 and going all the way out to well 2100. Our aim here is really to understand what this kind of granularity this detail unlocks for you the user.

Speaker 1: OK, let's unpack that scale first. When you say detailed what are we actually, talking about?

Speaker 2: We're talking global gridded population distributions. The resolution is 30 arc seconds - one kilometre square basically, and that's for the entire planet, spanning nearly 75 years into the future.

Speaker 1: Wow, why does that one kilometre resolution matter so much though?

Speaker 2: Well, it lets research move beyond just country level stuff or even, you know, state or province level estimates. You can start to model things like climate impacts or resource needs, maybe disease spread down to what feels like a local neighbourhood level.

Speaker 1: OK, I see.

Speaker 2: And for big global modelling efforts like the ones feeding into the Coupled Model Intercomparison Project, that's CMIP, this kind of early release data is pretty foundational.

Speaker 1: Right, CMIP, yeah. And you mentioned consistency before we started. These projections aren't just pulled out of thin air, are they? They have to line up with something bigger.

Speaker 2: That's absolutely key. They have to be quantitatively consistent with the established Shared Socioeconomic Pathways, the SSP's. Specifically, the national population scenario totals. Yeah, and while the framework is anchored particularly to the SSP 3.2 national totals for some core aspects, the actual zip files you download, they cover all 5 scenarios. SSP 1, 2, 3, 4 and 5. So, there's flexibility there.

Speaker 1: But you're saying the anchoring to SSP 3.2 gives us a particular insight. That's a regional rivalry pathway, isn't it? Kind of a fragmented worldview.

Speaker 2: Precisely. Think fragmented development, more nationalistic barriers, big challenges for global cooperation on sustainability. That kind of picture.

Speaker 1: So how does that connect to the one kilometre grid?

Speaker 2: Well, if you're working with data consistent with SSP 3.2, it means that down at that local 1 kilometre level, you shouldn't really expect, say perfectly efficient integrated urban planning everywhere. Instead, these projections might suggest where you'd likely see more localised, perhaps high density sprawl continuing. Why? Because the underlying scenario assumes policies favour that kind of fragmented - maybe national or regional growth - over globally integrated sustainable stuff?

Speaker 1: OK. That makes it much more than just a map then it's almost a reflection of potential political choices baked into the data. But how on Earth did they model where people will be in, say 2080. Projecting a national total is one thing, but distributing them across these tiny 1 kilometre squares, decades out?

Speaker 2: Yeah, that's where the methodology gets really interesting. They start with existing current population data to get the subnational population proportions. These are summarised at what's called administrative unit level 2. You could think of that like local government areas or districts maybe.

Speaker 1: OK, Admin Level 2 got it.

Speaker 2: Then comes the tricky part, projecting the built environment. Where will settlements actually grow?

Speaker 1: And this is the bit that caught my eye. They extrapolated future settlement changes right out to 2100 based on just 10 years of recent historical growth from 2015 to 2025 plus these probability layers

Speaker 2: That's right. They looked at that recent built settlement growth trend and then used probability layers maps showing where land could feasibly be developed to project forward. Then the resulting data, the output gets normalised. This is crucial. Make sure the final numbers still add up to the required national totals from the SSP's, while also keeping those detailed subnational patterns derived from the settlement projections. It's kind of a balancing act.

Speaker 1: OK, but projecting 75 years based on just a 10 year snapshot of recent growth, even with probability layers? That sounds, well, ambitious. Maybe even a bit uncertain.

Speaker 2: It is ambitious and that leads us straight into the really important caveats here. WorldPop is being very clear in the Release Statement that this data is provided "as is, where is".

Speaker 1: As is where is, OK.

Speaker 2: Yeah, it's meant as a foundational tool, something to support climate and development applications. Now, especially for things like CMIP, but it's definitely not presented as the final perfect picture.

Speaker 1: So, the message is use it but use it critically. Understand the assumptions.

Speaker 2: And they explicitly state that improved versions are already in the pipeline, which is good news.

Speaker 1: That is reassuring. And they want feedback, too, right? If you're using this data and spot something odd.

Speaker 2: Absolutely. They actively encourage users to get in touch. The e-mail is release@worldpop.org if they find potential errors or have concerns. That feedback directly helps them improve the next versions.

Speaker 1: So, for you listening, the value here seems pretty clear. If you're looking at climate vulnerability or planning infrastructure or tracking development goals. This forces you to think about where specifically these future populations might be. It moves things from hypothetical to geographical.

Speaker 2: It makes it much more concrete. And one final point. This data is fully open access. It's under a Creative Commons Attribution 4.0 international licence. CC-BY-4.0. That means it's designed to be used, widely shared, built upon.

Speaker 1: Good. As long as you give proper credit. Of course.

Speaker 2: Precisely, citation is required, but the goal is broad use - knowledge built to be shared. As you said earlier.

Speaker 1: Excellent, a valuable resource, but one to be used with awareness of its current version status.

Speaker 2: Definitely. To access the actual data files and read that important release statement for yourself, just follow the link you'll find below.