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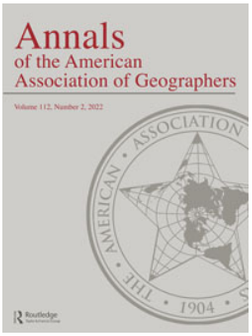

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"It's Not for Everybody": Life in Arizona's Sparsely Populated Areas

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Sparsely populated regions (SPRs) have specific features like remoteness and low population densities but also specific identities constructed by their inhabitants based on their relationship with their environment and the consequences to their lifestyles. Although theoretical frameworks have been developed for SPRs, two challenges remain when it comes to applying them to actual places. The first one is identifying them on the map. What would the demographic threshold of "sparse" be? How do we quantify the isolation? The second one is evaluating how SPR features reverberate in the lifestyle and self-image of their inhabitants. What are their views about themselves and their geographical situation? Are they linked? This article attempts to elaborate on both dimensions. It uses the state of Arizona as a test area and proposes an approach that combines quantitative methods and geographic information systems to determine which part of Arizona can be considered an SPR and a qualitative analysis to analyze how this population sees and conceptualizes its lifestyle, as well as how they relate to more densely populated areas, especially on the issue of isolation relative to place attachment and place identity. As a result, this article will offer a better grasp of SPRs in the United States and suggest new trends to be investigated in other geographical contexts.
Key Words: isolation, remoteness, rural areas, sparsely populated areas.

> [M]ostly Arizona is desert country. … ninety percent of my state is an appalling burnt out wasteland, a hideous Sahara with few oases, a grim bleak harsh overheated God-damned and God-forgotten inferno. … Nobody in his right state of mind would want to live here.
>
> —Abbey (1977, 147–48)

Despite this provocative description by Edward Abbey, Arizona's isolated areas are not deserted. They are inhabited by a small number of people who thrive in such conditions.

Sparsely populated regions (SPRs) stand out as a geographic environment. Contrary to what one would expect, they are still a dominant feature of today's world: 86 percent of North America and 74 percent of the conterminous United States has a population density of less than 1 per square kilometer (2.6 per square mile). The most interesting and defining feature of SPRs, however, is how their low population reflects in specific cultural and social features (Le Tourneau 2020) and how people living in such settings express different worldviews and perspectives, considering isolation and harshness as positive factors, and even amenities.

Recognizing this distinctiveness of SPR populations is essential for deflating and avoiding many mounting environmental conflicts. In the race to mitigate climate change and loss of biodiversity, SPRs often appear as ideal "empty" spaces that can be exclusively committed for such purposes, overlooking existing populations and their views of their territories. But who are the SPR inhabitants and what makes them different? Does the SPR theoretical framework apply to areas in the conterminous United States as it does in the Far North or the Australian bush?

To answer such questions, this article looks at southeastern Arizona. The first part reviews the literature on SPRs to show how this concept can be applied to the Western United States and how it relates to other geographical discussions on rurality and place attachment. The second part presents the methodology, which uses both a quantitative geographic information systems approach and a qualitative interview-based survey. The third part presents the results, first locating Arizona's SPRs and describing their demographic dynamics and then analyzing qualitative data collected in the field during exploratory research. The fourth part discusses how these

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results highlight SPRs' distinctiveness and studies the connections between place, location, and identity using situations found in similar regions around the world as points of comparison.

As a result, this article shows the heuristic potential of approaching SPRs as a specific geographical environment in relation to place, identity, and policies on climate change and other environmental management discussions. It also sheds new light on some contemporary social and cultural features of the Western United States, better understood using the SPR framework.

Sparsely Populated Regions as a Research Object

SPRs as a Distinct Type of Region

At the beginning of the 1980s, Lonsdale and Holmes (1981) drew attention to what they called "sparselands." By looking at Australia and the United States, they demonstrated that sparsely populated areas were not just found in third-world countries (where they were often studied under the "frontier" paradigm) but are also an enduring feature in the contemporary developed world.

Along the same lines, Carson and Carson (2014) studied SPRs in countries such as Australia and the Nordic European countries and confirmed their distinctiveness. They proposed the 8D framework, an analysis based on eight core characteristics (distant, disconnected, discontinuous, diverse, detailed, dynamic, dependent, delicate) that should be used as stepping stones when studying SPRs. Although all of these characteristics can be found in other contexts, it is the combination of all of them that makes SPRs special.

Building on these works, a recently published paper (Le Tourneau 2020) demonstrated that the concept of remote and disconnected regions located beyond the fringes of the rural world exists in many cultures (concepts such as *backcountry*, *outback*, and *bush* in English, echoing others in other languages) and that common points in SPRs can be narrowed down to four core characteristics. Each one intersects with the others, and their interplay gives SPRs across the world their distinctiveness. These points are as follows:

- *Low population*: In all cases, sparsely populated areas are regions where space is abundant and humans are rare, which translates to isolation for the population living there.
- *Incomplete control*: Control by central governments, as well as by local population, is put in check by distance, rugged terrain, or both, resulting in the presence of illegal or informal (or unregulated) activities such as smuggling, poaching, informal exploration of natural resources, and so on. Incomplete government control is another important difference with rural areas.
- *Remoteness*: Even if the definition of remoteness varies by country, it is not easy to get to SPRs, which implies that there are few services (health, education, retail stores, etc.). Counterintuitively, as Carson and Cleary (2010) showed, remoteness is increasing in today's world despite technological progress because although accessibility improves, it does so at a slower pace than in better served areas, which results in a widening gap. As Bocco (2016) pointed out, remoteness is a complex concept that is both absolute (geometric distance plays a role) and relative (the way each society relates to absolute distance and travel).
- *Presence of otherness and distinct lifestyle*: SPRs are often places where indigenous groups were able to maintain a meaningful presence and control over large territories; they also often serve as a refuge for social groups who are persecuted in the cities or otherwise discriminated against. As I emphasize in this article, the specificity of the SPR setting (lots of space and a small human population) also translates into particular relationships with the environment and has a great influence on place attachment. All of this results in a distinctive lifestyle that sets those living there apart from urban and rural populations, even if they are not an ethnic or cultural minority.

SPRs are not a vanishing figure in today's world. According to WorldPop (2020), areas with a demographic density of less than 1 per square kilometer (2.59 per square mile) still account for more than 59 percent of the emerged lands globally, and 86 percent of North America today (Figure 1). A very intense process of concentration in urban areas goes along with the current growth of the global population (Le Tourneau 2020), leaving most of the emerged lands of the world sparsely populated—which is not to say that it is untouched. Therefore, addressing SPRs as a research object does not mean looking at remnants of rapidly shrinking territories but rather observing the condition in which a large portion of the world (including developed and temperate areas) stands today.

SPRs, Rurality, and Exurbanization

In their seminal work, Lonsdale and Holmes (1981) explained why SPRs cannot be framed as "an

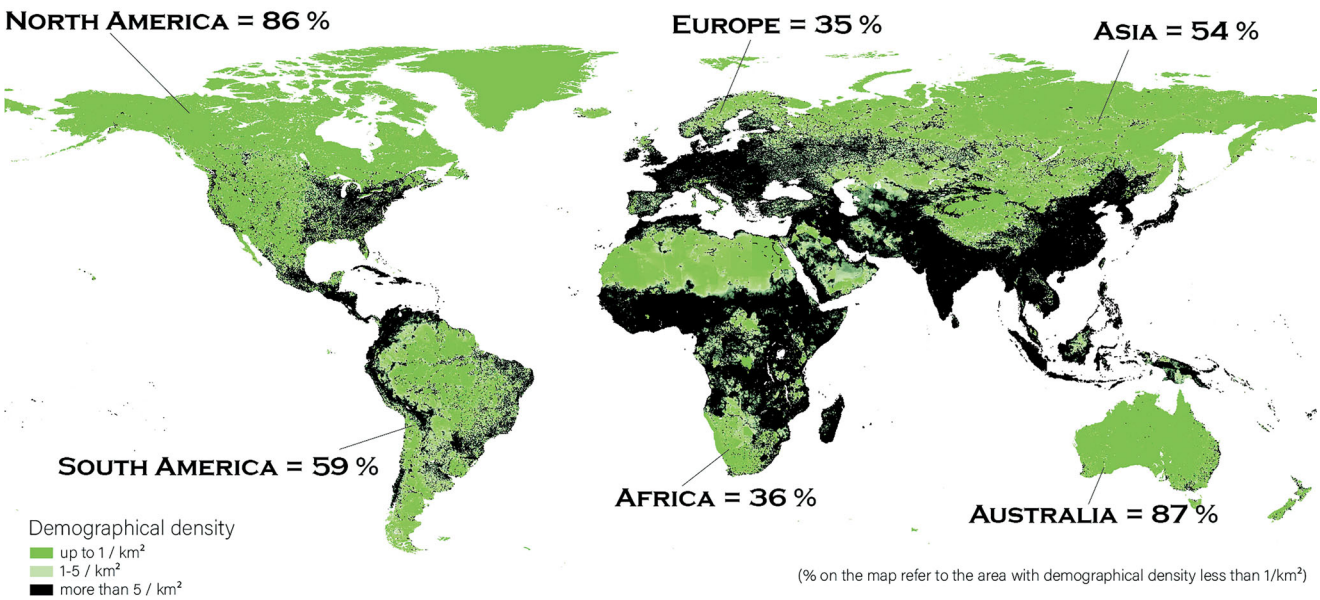

Figure 1. Sparsely populated regions across the world. *Source:* Data from WorldPop (2020).

extreme case of rurality" (3). First, they are more often than not considered "hostile" or "inhospitable" (a reminder of Abbey's quote), as opposed to rural areas that are viewed as favorable to settlements.[1] Second, they rely more on extractive and extensive activities than on agriculture. Human activities are discreet and discontinuous. SPRs do not form a "country" or a "farmland." Remembering Carson and Carson's (2014) 8D framework, rural areas might share some features with SPRs, but they are not disconnected (or they would not be able to export their agricultural production to markets) or discontinuous (farms often form clusters of farmland). Thus, the combination of characteristics that define SPRs is incompatible with most definitions of rurality (Le Tourneau 2020).

SPRs do not consist of just scattered settlements, though. As Lonsdale and Holmes (1981) and Carson et al. (2011) also pointed out, they could include different kinds of urban nuclei (isolated bases for resource extractions, villages linked to military bases and outposts, trading centers, etc.). It would be tempting to link this observation with the blurring of lines between urban and rural, which has been observed in the last decades, by the increasing encroachment of urban developments on formerly rural landscapes. In the United States, these led to the emergence of new concepts, such as exurbanization, rurbanization, and counterurbanization. The latter term explicitly indicates a move by "urban refugees" (Löffler and Steinicke 2006) from denser to less populated and remote—and, in general, high-amenity—areas (Rudzitis 1993; Mitchell 2004). Some see this move as provoking the emergence of a New West (Shumway and Otterstrom 2001; Otterstrom and Shumway 2003; Travis 2007) where a shift in the inhabitants' appreciation of open spaces can be observed, from an economic use of rangelands to the prospect of maintaining amenities.

These discussions crisscross with the SPR concept, but they do not account for most of it. High-amenity areas and exurban fringes constitute highly connected and denser areas that slip outside SPR characteristics. For instance, Gosnell, Haggerty, and Travis (2006) remarked that ranch conversions to residential purposes are fewer in "remote ranching counties," showing that distance and isolation are deterrents to the different dynamics linked with ex- and counterurbanization.

The hybrid nature of SPRs, which contain urban nuclei in isolated regions, and their distinct characteristics thus make it impossible to include them easily in urban-to-rural gradient discussions. This implies going beyond the rural–urban dichotomy, as Schaeffer, Kahsai, and Jackson (2013) suggested, and accepting them as a category of their own.

Exploring Place Attachment and Place Identity

Understanding why some people continue to live in or move to remote and underserved areas requires taking into consideration concepts such as place

attachment and place identity. A reminder of Abbey's initial quote, Smith (2017) wrote that "Humans are curious creatures; sometimes the emotional ties they make to a place defy logic" (1). He also showed how research on place attachment has been initiated by psychologists and environmental psychologists (e.g., Fried 1963; Proshansky 1978), as well as human and cultural geographers (e.g., Tuan 1974, 1977). As Lewicka (2011) explained, the corpus of literature has grown a lot since then, with more than 400 references at the date of her study.

Many authors explore place attachment as encompassing at least two dimensions. Kyle et al. (2004) underlined the difference between place identity, in which there is a "cognitive connection between the self and the physical environment" (214), and place dependence, where a given place is necessary to the achievement of specific goals. For Livingston, Bailey, and Kearns (2008), this translates into "emotional" or "functional" place attachment. On their end, Scannell and Gifford (2010) proposed a framework for place attachment studies relying on the person, place, and process tryptic. Building on this, Smith (2017) put forward a typology of places that people are attached to, distinguishing six categories. Among those, the "restorative places" category (where the connection with the place provides peace of mind and a sensation of serenity and fulfillment) has strong ties with SPRs, as we will see later. Along this line, Hernández et al. (2007) researched whether there was a perceptible difference between people born there and people who migrated to those areas, without reaching a totally conclusive result.

Working on emotional attachment to places, Livingston, Bailey, and Kearns (2008) explained that individuals and groups can identify with specific features or places, sometimes in a surprising way. This relationship between place attachment and self-identity has been explored by Twigger-Ross and Uzzell (1996). They came up with three features that, as we see later, are fully at play in SPRs. The first one is *distinctiveness*, or the perception that the place makes people different or special. The second one is *continuity*, which can be broken down into place-congruent continuity, or "the fit between the environment and the residents' desires and values" (Twigger-Ross and Uzzell 1996, 214), and place-referent continuity, where the place has a significant meaning in the person's history. Finally, *self-esteem* refers to how the place allows people to think better of themselves.

Still drawing on environmental psychology, one could postulate that there is an additional SPR specificity: being surrounded by vast spaces, which creates a different connection with geography. For example, Farrugia, Smyth, and Harrison (2016) showed how this dimension is key in the self-construction and space-related affects of Australian Bush young non-Indigenous inhabitants. For them, being able to roam the countryside freely is seen as part of their identity. This openness is one of the distinctive features of Australia's outback, has become iconic, and is also now being intensely exploited by tourism operators and official bodies (Carson and Taylor 2009).

Arizona as an SPR

Arizona's territory was acquired with the Treaty of Guadalupe Hidalgo in 1848 and the Gadsden Purchase of 1854 and then conquered by Anglo settlers during the Apache wars. It is composed of different environments: the relatively low-lying Sonoran Desert in the south, dotted by mountains that act as "islands" that harbor pockets of forest vegetation; in the center the high country, covered by extensive forests of juniper trees and pines; and the Colorado plateau in the north, mostly covered by steppe-like vegetation.

Because of the lack of water in the south and the harsh winter conditions in the north, most of Arizona—except a few valleys where irrigated districts have been created—is not conducive to agricultural activities. It has been largely overlooked by homesteaders (Le Tourneau 2019), and its population only grew steadily in the second part of the twentieth century as a result of the development of industries and services, as well as the strong marketing of suburban developments offering retirees and firms the joys of a year-round sunny climate made bearable by the widespread use of air conditioning (Sheridan 2015). As this process mainly drove populations toward the sprawling suburbs of Phoenix, Tucson, and Prescott, most of Arizona's territory is still only sparsely populated, making it an interesting place to analyze how the distinctive geographical and social features identified in different SPRs across the world appear there.

Material and Methods

Because the definition of SPR involves several dimensions, drawing them on a map is not

straightforward and requires an approach that mixes quantitative and qualitative analyses.

Pioneering Works on SPR Mapping

As pointed out by Cromartie et al. (2013), Turner's frontier theory, based on a demographic density map where all areas under one person per square mile were considered frontier, can be considered as the first academic approach to SPR. Using the same threshold, 81.7 percent of Arizona would still qualify as frontier in 2020, the total population of all this land being a meager 7,758 persons.[2] A closer look, however, shows that some areas with a low demographical density are on the immediate periphery of large cities such as Phoenix and Tucson. They thus match the demographic criterion of an SPR but not the criterion of remoteness or isolation because, by virtue of their location close to urban areas, they are well connected. A more complex approach is thus necessary to effectively map SPRs.

A pioneering work in this line was the Accessibility/Remoteness Index for Australia (Glover and Tennant 2003), in which the distance to the next center across five categories of urban settlement is scored from 1 to 3. The index thus has a span of values from 1 to 15 and differentiates remote areas that are in direct connection to major urban centers, areas that are very close to small urban centers that are themselves very distant from bigger regional and provincial centers, and areas that are distant from any center.

If Accessibility/Remoteness Index for Australia data sets are distributed for Australia, there are few preprocessed data to analyze U.S. SPRs. The Census Bureau data sets' main differentiation is between rural and urban, and this distinction has been contested either because it encompasses obvious rural tracts in urban areas (e.g., the Grand Canyon, which is included in a "metropolitan area") or because it does not encompass small urban centers (Isserman 2005). According to the Health Resources and Services Administration (n.d.), three different definitions of urban and rural coexist in the United States, but none of them discerns between well-connected rural areas and very remote ones. Part of the mischaracterizations occur because most data sets use counties, which can be very extensive in the Western United States, as base units.[3]

Bearing in mind the Australian index, Cromartie et al. (2013) proposed a model based on a raster data set for the United States (1-km or 0.62-mile resolution) where travel costs to urban areas were calculated based on the distance to the road network and the speed limits of each type of road. Three types of "frontier areas" were then specified according to travel time to cities and size of urban areas. Similar work was done for the European Union, where a remoteness criterion was added to its classification of rural, distinguishing between "rural close to a city" and "remote rural," where the latter was characterized as 50 percent of the population having to drive more than forty-five minutes to get to a city center (Dijkstra and Poelman 2008, 2018).

All of these works reveal that remoteness and isolation do not merely equate to distance or demographic density. They also show that essential basic services are not provided at the same level in those areas as they are in well-connected ones. As Cromartie et al. (2013) put it, "Perhaps the defining challenge facing frontier communities is the increased per capita cost of providing services. … Remoteness increases costs in accessing groceries, household goods, childcare, entertainment, and all types of publicly provided social services" (150). Access to food products can also be somewhat problematic, as Morton and Blanchard's (2007) cartography of "rural food deserts" shows. Because of a low number of customers, retail stores close or move out of isolated areas, and even cell phone services and Internet providers can overlook remote regions, unless forced or incentivized to provide minimal coverage by governments that are worried about territorial continuity.

Quantitative Approach

This study's quantitative approach was based on several geographic information system processed data sets: the state of Arizona's[4] road network (needed for gauging accessibility and isolation); the census block grid for the 1990, 2000, 2010, and 2020[5] censuses (which provide the most disaggregated view of the distribution of the population; Manson et al. 2019); a georeferenced database of food retailers in Arizona (to measure access to services; geocoded from the list of Food Wholesale and Retail facilities [U.S. Environmental Protection Agency, Region 9 2018]); and Arizona's land department land ownership data set (to analyze SPR land status).

Tabular census data for the years 1990, 2000, and 2010 were extracted from the IPUMS/NGHIS platform at the block level (Manson et al. 2019), with variables describing total male, female, and age group population for each block. The disaggregated data's potential for providing new insights on rural populations in the United States has been demonstrated by Le Tourneau (2018).

Qualitative Approach

The qualitative part of the research was conducted by performing exploratory field interviews, using a questionnaire with twenty-one closed or semi-open questions. The questionnaire was used to collect a standardized set of information but also to create freely flowing discussions that, in most interviews, went far beyond the initial topics. Interviews usually lasted about thirty minutes, with some being longer because interviewees were comfortable giving a broader view of their lifestyle and opinions about it. Because each location was quite isolated, travel time was significant and only two to three questionnaires, more often than not just one, were completed for each full day of fieldwork. Also, a lot of time was spent in the field searching for inhabited places (many buildings were abandoned or otherwise empty) and sometimes it was necessary to go back several times before encountering the inhabitants. For this reason, sampling was based on opportunity interviews, more so than on a representative basis, which was almost impossible to build beforehand. The final sample composition, however, is compatible with the basic statistics of an SPR that can be derived from the 2010 U.S. Census in terms of the interviewees' age and gender. Tribal lands were ignored deliberately because they respond to different social and cultural dynamics that are not within the scope of this research.

The information was gathered on a paper notepad initially and processed afterward. Interviews were anonymous and not tied to a precise location. Geographical positions were recorded separately (Figure 2). This study is built on twenty-seven questionnaires administered from August 2018 to January 2020, mostly in the southeastern part of Arizona, to people residing permanently in remote areas. Two main profiles appear in the sample: Arizona SPR natives (thirteen people, some of whom might have spent a great part of their lives in other states, but also some from old local families with strong ties to Mexico) and people who migrated from other states (fourteen people). Among the latter, nine originated from SPRs elsewhere in the United States and five came from urban areas (some defining themselves as "global nomads"). Thus, even if a migration to an SPR exists as seen in the census data, it seems to be mainly from people who already had an SPR background. Fourteen of the interviewees were ranchers, five of them managers, not owners, echoing Brunson and Huntsinger's (2008) remark that there is a growing disconnect between the ownership and the operation of ranches in the Western United States. Five ranchers could count on retirement benefits, so their livelihood was not dependent on the ranch operation. Four interviewees were fully retired and three lived off tourism, sometimes combined with ranch operations.

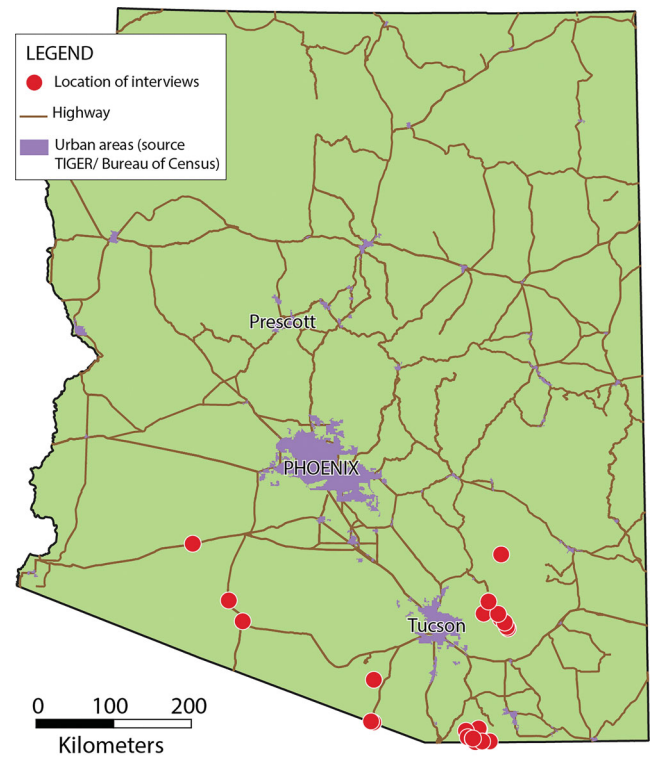

Figure 2. Location of the interviews ($n = 27$).

Locating Arizona's SPRs and Determining Their Population

We chose to follow a two-step approach to identify which parts of Arizona could be considered SPRs. First, we created a map quantifying remoteness and, second, we compared this map with the census data.

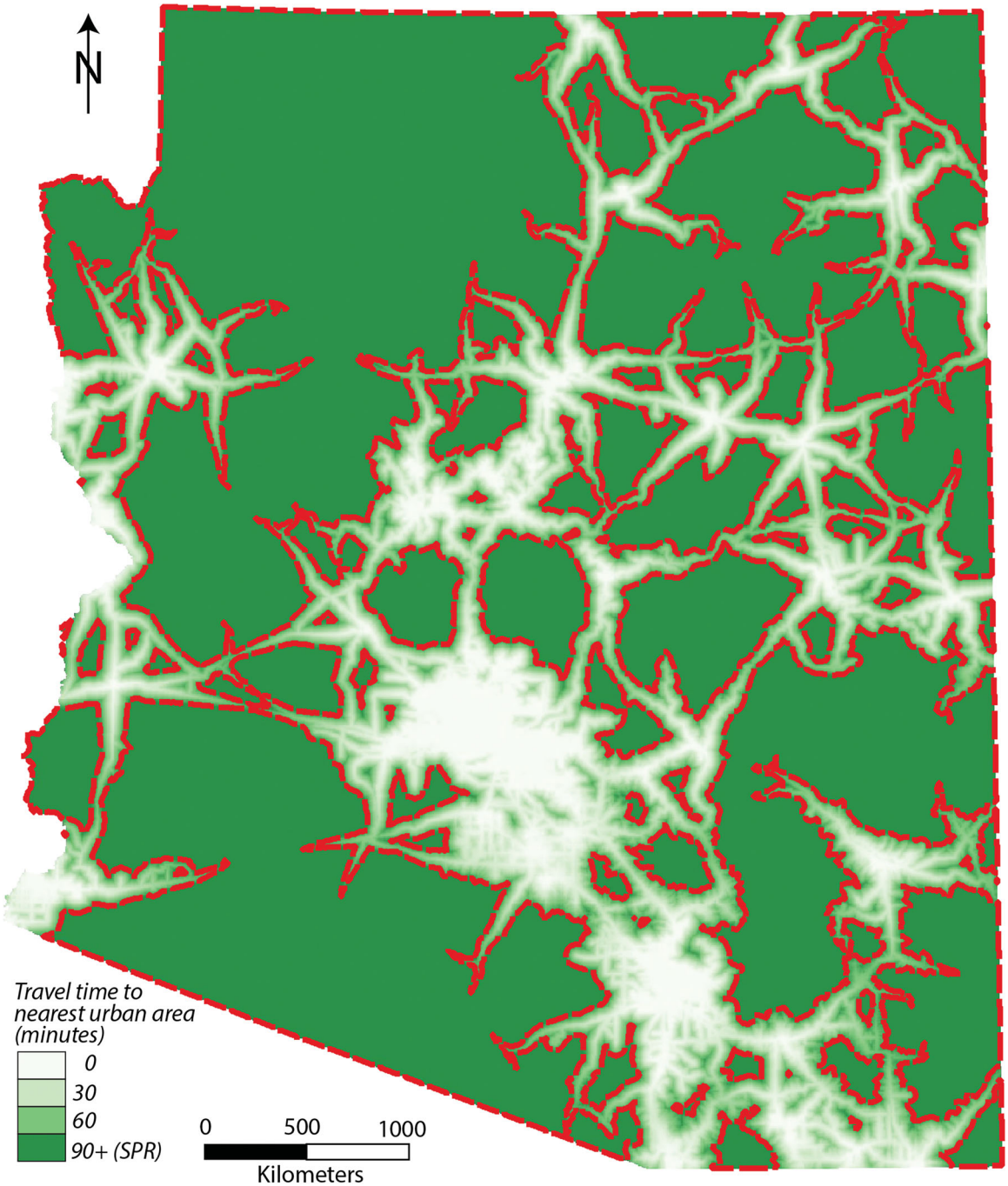

Figure 3. Map of surface cost with sparsely populated regions underlined.

The first map (Figure 3) was created using a friction surface to calculate travel cost (in minutes) according to the proximity to the road network and the nature of the roads, with values approximately reflecting the time required to travel a distance equivalent to the size of the raster cells (500 m × 500 m) and the growing difficulties when leaving the main road network and its surroundings. Urban area cells were assigned a zero travel cost because it is assumed they have easy access to services.

The travel cost to the closest center was then calculated for each cell of the data set. For this calculation, we considered as "center" every continuous area tagged as such by the 2010 U.S. Census Bureau that also had at least two food retail stores. We chose this last criterion because shopping for food is

Figure 4. "In the middle of nowhere," banner at the Sentinel gas station in Arizona.

an essential activity and the existence of retail stores can serve as a signal of the existence or lack of minimal services: In almost all cases, health education, social services, and so on will not be available if retail is nonexistent. All preceding calculations were made with raster grids with cells of 500 × 500 m, with datum/projection NAD83/UTM 12 N (EPSG 3719).

From the resulting travel cost raster, we extracted Arizona's SPRs by selecting all cells with a cost greater than or equal to ninety minutes from the closest urban area, a threshold well above the "frontier 3" areas of Cromartie et al. (2013). With this definition, Arizona's SPRs cover a very sizable area of 185,669 km^2 (71,687 square miles), or 62.9 percent of the state's total area. Interestingly, this area includes sections that are crossed by interstate highways, showing that the existence of such infrastructures is not, per se, enough to erase remoteness. One of those areas is located in the middle of the highway linking Phoenix to Yuma. Called Sentinel, it is composed of a small cluster of buildings lacking almost all services except a gas station where a banner claims it is "the middle of nowhere in Arizona" (Figure 4).

The travel cost map was then checked against the population distribution (U.S. Census Bureau data at the block level). To that end, all of the core demographical indicators were expressed in terms of density (i.e., divided by the census block's area in square kilometers). We then performed a union operation between the block grid and our SPR map (which had been vectorized). Finally, the demographics were calculated again in the resulting data set, multiplying the density of each characteristic by the area of the new polygons. Obviously, the density calculation places people evenly on each census block's area, which more than likely does not match reality and gives a slightly distorted view of our object. This is the case for all of these types of calculations, however (e.g., the demographic density at the county level that was the basis of Turner's theory). Furthermore, because blocks are the most disaggregated units in the census, it is assumed that the distortion remains limited.

Results of the Quantitative and Qualitative Approach of Arizona's SPRs

Basic Characteristics of Arizona's SPRs

SPR inhabitants account for a very small fraction of the overall state population (1.26 percent in 2020 or about 90,222 people; see Tables 1 and 2), but they occupy almost 63 percent of its area. This extreme disproportion both justifies the qualification of an SPR and illustrates why the concept of rural seems ill-suited for them. Because of Arizona's steady

Table 1. Basic demographics of Arizona's SPRs by category of population

	Total SPR				Urban			Rural		
	Persons	Males	Age <60	Age ≥60	Persons	Males	Age ≥60	Persons	Males	Age ≥60
11990	68,808	34,594	63,783	5,025	6,143	2,928	1,303	62,665	31,666	3,722
22000	74,258	37,268	62,992	11,266	9,042	4,417	1,558	65,216	32,851	9,708
22010	76,698	38,539	61,364	15,334	12,597	6,076	1,894	64,101	32,463	13,440
2020	90,222	—	—	—	—	—	—	—	—	—

Note: SPR = sparsely populated region.

Table 2. Percentage of specific demographics of Arizona's SPRs by category of population

	Total SPR			Urban			Rural		
	Arizona % SPR	Sex ratio	% Age ≥60	% Urban	Sex ratio	% Age ≥60	% Rural	Sex ratio	% Age ≥60
11990	1.88	101.11	.30	8.93	91.07	21.21	91.07	102.15	5.94
22000	1.45	100.75	5.17	12.18	95.50	17.23	87.82	101.50	14.89
22010	1.20	101.00	9.99	16.42	93.18	15.04	83.58	102.61	20.97
2020	1.26	—	—	—	—	—	—	—	—

Note: SPR = sparsely populated region.

demographic growth (total population grew from 3.7 million to 7.1 million from 1990 to 2020) and the concentration of this new population in suburban developments, the percentage of SPR inhabitants in the total population of the state has diminished from 1.88 percent in 1990 to 1.26 percent in 2020. The contrast between high-density small areas and sparsely populated vast zones confirms the "desert and oases" figure pointed out by Otterstrom and Shumway (2003) as typical of the Western United States and also Rudzitis's (1993) remark that although the cliché image of the West is rural, a vast majority of its population is urban.

Arizona SPR population is, however, rising in absolute value, even if modestly, contrary to what is seen in Australia or Europe. Total increase was about 8,000 people, or 11 percent total growth, from 1990 to 2010 (as opposed to 74.4 percent growth at the state level) and, according to the 2020 preliminary figures, 13,524 or almost 15 percent from 2010 to 2020, which could indicate that such growth is picking up.

This population is aging fast. In 1990, 7.3 percent of the population was age sixty and over, a proportion that has risen to almost 20 percent in 2010 and probably more today. This is the result of an aging native population but also the arrival of older people in search of certain types of amenities, most of them retirees coming from cities. This parallels the results of Dyrting et al. (2020) on retention rates in Australia's sparsely populated areas, where they observed that "retention rates increased significantly from the youthful to older lifestages" (443).

Consistent with the general definition of an SPR and its characteristic diversity, Arizona's SPRs include some underserved urban areas. They have a small (12,597 people in 2010) but meaningful and increasing presence: They accounted for 8.9 percent of Arizona's SPR population in 1990, 16.4 percent in 2010, and probably more in 2020.

The elderly population's share has evolved in an exactly inverse proportion between urban and rural. Older people were much more concentrated in urban areas in 1990 (21.2 percent), and this proportion has decreased (to 15.0 percent), whereas the percentage of residents age sixty and over in rural SPR areas rose from 5.9 percent to 21.0 percent. This is undoubtedly a reflection of the broad employment crisis and the decline of the ranching industry. In 1990, many younger people were employed in ranches and in other agricultural and timber-related jobs, and they lived on farms and remote cabins. Today, they have migrated to urban areas in search of jobs, and mostly older ranchers remain on their lands. As Interviewee 10 put it, "Ranching and mining died in this region after the 1950s, and therefore population fell a lot. … Ranches were sold to builders or to bigger ranchers, they invested in mechanization so there were fewer jobs."

Table 3. Land ownership of Arizona's SPRs

		Total area (km^2)	Total area (mi^2)	% of SPR
Public lands	Bureau of Land Management and state lands	5,5076.25	21,264.9	29.7
	National forests	25,767.25	9,948.7	13.9
	National parks and other conservation areas	15,908.50	6,142.3	8.6
	Military bases	9,444.25	3,646.4	5.1
	Subtotal	106,196.25	41,002.4	57.3
Native American lands	Indian reservation areas	59,275.25	22,886.2	31.9
Private lands	Private lands	20,154.50	7,781.7	10.9
Total		185,626.00	71,670.2	

Note: SPR = sparsely populated region.

Finally, although the sex ratio is balanced overall, differences appear between urban and rural areas: The former ones see a meaningful imbalance in favor of females, whereas the latter have a smaller but existing imbalance in favor of males. Possible explanations were given during the interviews, where many people seemed to take for granted that SPRs are repulsive to women. Ranchers (and their mothers) talked about sons and cousins dragged to the city by wives who could not stand the isolation, and others directly expressed how this made their personal life more difficult: "It played a role in my divorce, for sure" (Interviewee 9). Some also pointed out safety concerns: "This is not a country for an alone woman" (Interviewee 29). In rural SPRs close to the southern border, however, women appear in greater numbers than men in the U.S. census (51.5 vs. 48.5 percent), which shows that there can be a difference between common assumptions and reality. Nevertheless, Williams and Boyce (2013) showed that this type of context can also reduce mobility and activities for women who can fear running into trouble.

Who Owns Arizona's SPRs?

Not surprisingly, public lands are overwhelmingly dominant in Arizona's SPRs, accounting for 57.3 percent of the total area (Table 3). Part of this total (8.6 percent) is devoted to conservation, but the vast majority (43.6 percent), consisting of federal and state lands as well as national forests, is managed for multiple uses. This means that even though public, those lands are intended for economic activities, especially extensive ranching, which, although now marginal in Arizona's economy, is still a significant activity in its SPRs. Military activities such as the training of bombing jets and other kinds of hazardous, noisy, and potentially dangerous activities, are also located in SPRs because they are less likely to be opposed or result in accidents. Military bases account for 8.6 percent of Arizona's SPRs. This feature is recurrent in SPRs across the world, in tropical (Geiger 2009) and in northern areas (Konyshev and Sirguinin 2018).

Because of their remoteness, SPRs worldwide are where indigenous groups have been able to retain some of their traditional territories. This is the case in Arizona as well, where several tribes (especially the Navajo, Hopi, Tohono O'odham, and Apache) maintained their sovereignty on large tracks of land (albeit very reduced in relation to what those territories were before the Anglo conquest), mostly located in areas that the new settlers deemed too remote or too harsh to be desirable. As a result, Indian reservations account for 31.9 percent of Arizona's SPRs. They were not the subject of a qualitative analysis in this study, but expanding the same approach to them would certainly be insightful.

Private lands, for their part, are not very significant. Similar to other SPRs in the world, they occupy only 11 percent of Arizona's SPRs, which is a very significant difference from traditional rural areas, where private lands dominate. A large portion of public lands are used by ranchers under lease arrangements (Le Tourneau 2019), however, so the extent of private use and private resource extraction is higher than this figure suggests.

Ownership and control of lands are two different things. As mentioned earlier, incomplete control by central government is a defining feature of SPRs. This dimension is particularly present in southeastern Arizona, where the border with Mexico spans across large tracts of SPRs and where, as public lands dominate, the role of government agencies is particularly crucial. Enforcement agencies, such as the

U.S. Border Patrol and even some sections of the military (Schroeder 2012) therefore have a strong presence in the area. The insecurity or security that results from this situation is disputed among the inhabitants, some feeling well protected, whereas others stress about the presence of criminal organizations. As in other rural places of the United States (and SPRs worldwide), firearms are widespread and bearing them is considered normal.

Facing Isolation: Daily Difficulties and New Technologies

People living in Arizona's SPRs must face a number of difficulties in their daily life, such as lack of access to essential services, retail stores, health facilities, and so on. The interviews provide an idea of what this means in real terms. For instance, most people said that, because the place to go shopping was far, they tried to plan and take care of as much business as possible whenever they went to the city: "I shop each time I go to the city for other businesses," and, "I always have a list with me" (Interviewee 18).

The Western United States is not, however, totally lacking in services. Twenty-one out of twenty-seven interviewees had electric power and landlines. Access to power was sometimes pinpointed as a real divide: "When you have to generate your own power, it's isolated" (Interviewee 20). Most people, however, did not see being on the grid as vital because they were confident that they could work things out with solar panels and thermal generators (which some actually did). Having propane delivered for heating was also considered important but not completely indispensable. Tap water was much rarer (only four out of twenty-seven) and limited to urban areas and small villages. Cellular service was not always available: Only seventeen households had it and not always at home (sometimes a hill nearby is the connection point). A third of our sample (nine out of twenty-seven) had no easy means of communication (no cellphone service or landline), which is obviously a huge inconvenience in today's world, partially offset by satellite Internet service.

Physical access was also identified as a potential problem. Dirt roads often necessitate high-clearance vehicles and sometimes people remain cut off for days: "We are rarely stuck here but some storms really make it hard to get out" (Interviewee 4); "When washes are full we cannot pass" (Interviewee 25). This means that they must have stocks of food and medicine, but it also makes it harder for them to have a job outside the SPR: "During the rain, the road can be cut, we have to have groceries stored and be careful when driving. You cannot live here and commute every day, risk is you can't show up for work" (Interviewee 27). In many cases, school bus services, essential for maintaining families in SPRs, are disappearing, which is both a cause and a consequence of the migration of adults with children toward urban areas.

People living in SPRs must also get special health plans—when they can afford it—that take their remoteness into account: "We have plans with medevac by helicopter … they come even without doctor's advice because we are isolated" (Interviewee 23). Even if most people concede that a "serious health issue" could force them to leave their place and live in other settings, many cannot imagine giving up: "Only death will have me quit!" was a common answer.

Hence, as some summarized, "You sacrifice convenience when living here" (Interviewee 9) or "You always have to give up something, you can't have it all. I prefer being isolated. If there is no hospital, well that's how it is" (Interviewee 2).

Changes linked to new technologies were also acknowledged: "It's an easier life now with phone and Internet" (Interviewee 29). In some places, people create groups on social networks to share information and opportunities, as well as enhance solidarity. Many people stressed that they could now have packages delivered to closer locations and sometimes even to their door, which was a game changer for some. Maybe today the real criterion that defines isolation is being beyond Amazon's delivery areas. In this respect, obviously, what is called isolation in Arizona is not the same in absolute value as situations in the Arctic and in high-mountain areas. As Bocco (2016) asserted, though, remoteness is both a relative and an absolute concept when applied to geography.

"You Bet I Feel Different!": A Clear Sense of Distinctiveness

Because an SPR is not a well-known concept, when asked to qualify their surroundings, the

interviewees did not refer to it. Eight used the term *rural* to describe their place, but in general they added other words to distinguish from the common concept of rural or country: "isolated rural," "very rural," and even "little bit of rural and remote" (Interviewee 21). The others mainly chose "isolated" as a description, sometimes even "remote" or "wild." Thus, isolation, which is one of the core characteristics of an SPR, is clearly identified by the inhabitants as a defining feature of the place in which they live. A few of them, who had experiences in other states, also made comparisons, stating that Arizona's SPRs, especially in the southeastern part of the state, are probably less isolated than others: "This is very isolated but there is more isolated; I lived in Dakota and Montana, in places where you would not see anyone" (Interviewee 16). This shows different thresholds that are relative to each region and culture, as Bocco (2016) mentioned. Interestingly, ranchers were not the most inclined to use rural as a description (five out of sixteen). It should be noted here that, in Arizona, rural is often synonymous with isolated (more or less equivalent to Australia's bush), the common farm country of the eastern part of the United States being almost nonexistent in the state.

When asked whether they felt different from "city people" (an expression that instantly made sense), most of the inhabitants of Arizona's SPRs (twenty out of twenty-seven questionnaires) responded adamantly that they do (or, like Interviewee 12, that "it's the other way around; they are different"). Thus, the distinctiveness part of place identity (Twigger-Ross and Uzzell 1996) seems to play a strong role in Arizona's SPR. Three main themes arose from the interviews.

The first centers on superiority in relation to "city people." Self-reliance is highlighted as a key characteristic of people living in remote areas:

> City people need each other; they are more social. Here we are self-reliant. (Interviewee 10)

> You have to be self-sufficient; it's problematic to have people come in to do the job; so, if you need a plumber you have to be the plumber and so on. (Interviewee 17)

> City people have a different outlook on life than people who are self-sufficient. (Interviewee 18)

This can even turn into a sense of empowerment for some women running ranches or otherwise working on them: "I feel very capable. Women in this kind of situation have to know how to do lots of things. Physical things" (Interviewee 21).

This ability will be passed on to the next generation as an essential element for "survival":

> Here we don't depend on other people, you have to know how to repair a motor or do your plumbing. Here we teach our kids to work and do things because if they don't, they can't survive. City people cannot survive. (Interviewee 13)

Also, the people that I interviewed often referred to the fact that those living in the city would not want or could not accept what living in an SPR meant:

> City people would think too big of a challenge living here, having a flat tire every week because of the road and so on. (Interviewee 27)

> We're farther out. We have to be resourceful, tougher, live without comfort. (Interviewee 28)

> Most people don't like it, it takes a special person. (Interviewee 9)

> It's not for everybody. (Interviewee 15)

Suburban developments encroaching on SPRs are often despised as too urban: "Those are people who say they want to be away from the city, but most of them are city people at heart" (Interviewee 4).

The second theme is a distancing from the "craziness of city life" (Interviewee 4), expressing "anti-urban feelings," as Rudzitis (1993) put it. The city was described as dirty, dangerous, and above all overcrowded:

> I can't even understand how you live in a city. People are way too close, and so on. Your neighbor is only a few feet away. Who wants that? Too much noise, pollution, or crime and so on. (Interviewee 13)

> I love my fellow men better when they are scattered. City people lose contact with the reality, they don't know any more what they are after. (Interviewee 16)

> Life is quiet here, but city people don't have a concept of that. (Interviewee 26)

The fact that neighbors live quite far apart from each other in an SPR was often recognized:

> Here you don't need curtains. (Interviewees 18 and 23)

> We are outside all the time, we are not surrounded by people. (Interviewee 2)

Some described the return to isolation as a gradual process, almost a sort of meditation: "The first day, when you are out of society you miss the city. After a few days you don't want to see people anymore. Sort of Zen, no more chatter in your head" (Interviewee 17).

Cities are also seen as a place where things go too fast:

> We can have a slower pace, not the city pace. (Interviewee 2)

> They're faster. I am laid back, they are rushed, they don't take time. (Interviewee 20)

Many interviewees insisted on the discomfort they feel when they have to go to a bigger city: "I like the quiet. It's a little hard to explain. I go claustrophobic when in a city. Too many people. It's kinda weird" (Interviewee 15).

A third theme is the emphasis on a closer relationship to nature:

> I like when it's dark at night. I enjoy the freedom. Here you have different weathers, different moods. (Interviewee 9)

> It's a bigger awareness of nature. (Interviewee 4)

Even harsh realities are valued: "Scorpions in the bed, rattlesnake is the neighbor" (Interviewee 27). Here, we can feel the emotional component of place attachment that can, as Livingston, Bailey, and Kearns (2008) mentioned, even bind itself to surprising elements.

Place Attachment in Arizona's SPRs

Most of the interviewees indicated that they feel a profound bond with their surroundings, echoing both the place congruence and self-esteem parameters from Twigger-Ross and Uzzell (1996) or the emotional attachment to place. Some of the phrases used expressed intimate feelings:

> You're stuck, you're involved with it. It's a relationship, a marriage. (Interviewee 9)

> It's a love affair. (Interviewee 23)

> I feel an emotional relationship with this country. (Interviewee 2)

Others talked about the interrelation between the person and their surroundings:

> It just means everything. I could not live without it. (Interviewee 13)

> It's home. I enjoy it. It's not a feeling that is easy to describe but it's here. (Interviewee 15)

> I like it here. It's in my blood. Joy… relief… it's part of me. (Interviewee 19)

These answers are in line with the affects mentioned by Scannell and Gifford (2010) as an important part of the place-to-individual relationship.

Although a strong bond to their land appeared throughout the whole sample, individual backgrounds seemed to play a role and resulted in some differences. Not surprisingly, ranchers and natives stressed the fact that this is a family heritage:

> I was raised here. It tells all. (Interviewee 18)

> Family's been here forever. It's very much part of me. (Interviewee 20)

Some, who have lived away from their place of origin before they returned, stressed that the relationship is enduring, and this partially explains why they went back:

> Roots call you back. (Interviewee 10)

> So we closed the circle and went back to where we started. (Interviewee 18)

Many times, the same people will also mention a sense of stewardship toward the land:

> It's something emotional, but also a commitment and a sense of responsibility, of stewardship. (Interviewee 4)

> We take care of each other. (Interviewee 22)

On the other hand, people who chose to come as retirees after spending their lives in urban environments mostly focused on the journey they went through creating connection: "Place changes you. It's intimate. … Depth of the experience was unexpected" (Interviewee 12).

Solidarity and Fragmentation

During the interviews, most people asserted that there is a specific solidarity between people living in SPRs (twenty out of twenty-seven). Examples are diverse: helping a neighbor stuck on the road, offering help, checking up in case of illness, driving older people when conditions are difficult, trading work,

and so on. Most of the examples quoted were somehow related to being isolated, making the specificity of SPRs clear once again in this respect. Many of the interviewees, however, especially among the ranchers, were also careful to stress that it did not imply an invasion of privacy:

> We keep our nose out of the other people's business but help when they call. (Interviewee 11)

> Respect the other one's independence. (Interviewee 20)

Then, related to the issue of isolation and remoteness, solidarity in SPRs appears to be associated with survival: "We are there when there is a fire or a health issue, we have to help because if not we are done" (Interviewee 22).

Therefore, even if conflicts exist between neighbors ("We get along but there are bitter enmities, too" [Interviewee 16]), it is better to mend fences: "You may disagree, but you work to repair that because you might need the other. We are all very independent. But you need each other" (Interviewee 17).

This solidarity is not always automatic, however, and it exposes the rift between old-timers and newcomers: "With new neighbors it's a different story. I help the ones I know" (Interviewee 20). A rancher put it bluntly: "But D. [naming a property divided in large lots bought by urban retirees] is different, they are not the same kind of people as we are" (Interviewee 21). Also, "natives" with modest livelihoods were quick to point out that the secondary homeowners, or snowbirds, tend to make real estate more expensive: "Snowbirds have made it more complicated for people because they buy homes and raise prices. Local people cannot compete" (Interviewee 14).

Discussion: Arizona and the Distinctiveness of SPRs

Isolation as an Amenity

People living in Arizona's SPRs clearly consider isolation as an amenity: "Isolation is what we are looking for when we come here" (Interviewee 6). This echoes Bocco's (2016) comment that "landscapes of remoteness" can play a part in the feeling of belonging to a place but also Livingston, Bailey, and Kearns's (2008) views on how people and groups can identify to a place's specific (sometimes surprising) features. It also reminds us of Stegner's (1992) excitement about "the smell of distance."

To sum things up, many of Arizona's SPR inhabitants do not live there despite the isolation but because of it, which clearly differentiates them from people living in urban or rural areas. The insistence on self-reliance and survival are as much the reflection of the remoteness and isolation as the expression of this difference. People in Arizona's SPRs not only claim they have a different lifestyle but they frame it as a constant struggle against adverse conditions. This reflects what was discussed in the first section about SPRs in other parts of the world, often viewed as "hostile land," but also regions where place identity is grounded on such apparently paradoxical elements that, in turn, participate in the self-esteem part of place identity and the fit between the environment and people's values (Twigger-Ross and Uzzell 1996).

Survival is frequently mentioned, referring to both natural conditions and the lack of law enforcement common to SPRs. Most people were confident that they could defend themselves "with their two friends, Smith and Wesson" (Interviewee 10), in line with the acceptance of self-justice common in frontier areas (Geiger 2009).

Us and Them

Arizona's SPR inhabitants frequently expressed their difference from "city people." Many of the narratives I heard even asserted their superiority, upending the common clichés about rurality pointed out by Kasabov (2020), sometimes at the price of an obvious self-mythologization. Conversely, echoing the interviews quoted by Petite and Debarbieux (2013) in their study of remote villages in French mountain areas, Arizona's SPR inhabitants expressed their discomfort when they go to the city, a place that unanimously appears "overcrowded" and "dirty" (both materially and socially) in their eyes.

Although they differ from urban citizens, SPR inhabitants do not fit into the usual patterns of rurality either, especially where social relationships are concerned. Far from the famous gemeinschaft model (DijCloke 2006) associated with rural areas, they define themselves as individualistic and do not associate solidarity with a sense of community but with the individual necessity for survival.

Newcomers are often despised if they are retirees from suburban areas, which clearly mirrors the internal othering process described by Eriksson (2008) in rural Sweden but inverted: People in an SPR see

themselves as the antithesis of urban people because they are self-reliant, and they can be derogatory toward their neighbors if they see them as not being tough enough. This distaste toward newcomers can also be related to the inflation of home prices, similar to what Löffler and Steinicke (2006) described in their study of high-amenity areas in California. Thus, although SPRs are outside the scope of exurbanization as far as isolation and remoteness are concerned, they do not escape part of the economic dynamics involved in it.

"It's Part of Me …": Revealing a Distinct SPR Identity

Elements of a shared place-related identity seem to clearly appear in Arizona's SPRs, mixing aspects of self-definition (the pride of self-sufficiency and acceptance of the challenges posed by daily life in an SPR) and elements of differentiation with other groups and places, especially urban populations and urban areas. Most of these elements are variations of the four distinctive SPR features described for other parts of the world such as Canada's North or Australia's bush and underlined by Lonsdale and Holmes (1981), Carson and Carson (2014), and Le Tourneau (2020).

Some of the interviews quoted earlier reveal an intimate relationship with the environment. Others stress that the living conditions in SPRs are in accordance with their desires and needs, a reminder of Smith's (2017) restorative places and Farrugia, Smyth, and Harrison's (2016) results on the identity of the Australian bush's young inhabitants.

A point that somehow links these two (internal or intimate and external) dimensions is the focus put on individual freedom by most of Arizona's SPR inhabitants: Being far from your neighbor means you do not need to ask for permission to do something and you do not have to endure a moral judgment of most of your actions. Such conceptions align quite directly with the observations of De la Barre (2013) in Yukon and her analysis of the "Masculinist Narrative" where "the Yukon is imagined as a setting where vast remote space is perceived as emptiness and linked to opportunity. Individual choices are not witnessed; therefore, freedom is paramount because permission is neither sought after, nor granted" (833). The pride of being self-sufficient, which, we mentioned earlier, was also highlighted by the same author as a defining trait of Yukoners, once again similar to what I heard in Arizona and reinforcing this point as part of the distinctiveness of an SPR identity.

It is possible that for some of the people who have recently move to an SPR, their appreciation for the land is closer to a generic idea than to a specific place, reminding us of Feldman's (1990) "locales."[6] For them, it could be said that what they wanted is an SPR setting, wherever it was, whereas for old-timers their shared history with the place is an important factor. This difference in place attachment between natives and newcomers can also be framed along Tuan's (1980) concepts of rootedness as opposed to sense of place.

The intimate connection between SPR inhabitants and their environment, as well as the fact that isolation is a key part of their identity, sheds a new light on the environmental conflicts that are increasingly common in these areas. Thus, one of the communities involved in this research is fighting against cellphone coverage expansion and, for a while, was reluctant to accept power lines. This refusal of obvious modern comforts and the advantages they offer can be explained, in part, by the fact that it would denature the self-definition explained earlier. It would also make them closer to urban society, which, for the most part, they do not feel at ease in or were eager to quit (and perhaps it would also attract newcomers, making the area less sparsely populated). This type of situation is fairly different from most rural settings where the issue is, on the contrary, extending service coverage and diminishing geographical discrepancies found in better connected areas.

Other conflicts common in SPRs have to do with the creation of protected areas and the extension of environmental norms and rules. As the interviews revealed, SPR inhabitants consider themselves knowledgeable stewards and legitimate users of their environment, and they oppose the fact that sparsely populated areas are or should be, to urban eyes, turned into desert wilderness areas to be used exclusively for recreation or environmental preservation. Disregarding this internal perspective on SPR management can lead to confrontations with authorities, as transpired in Arizona but also in other areas such as in Oregon during the Malheur Wildlife Refuge standoff.

Conclusion

This article presented a quantitative and a qualitative approach to Arizona through the concept of

the SPR. It showed that this concept and the different frameworks elaborated to grasp it (Lonsdale and Holmes 1981; Carson and Carson 2014; Le Tourneau 2020) can be successfully applied to this Western U.S. state. From a quantitative perspective, mapping Arizona's SPRs allowed us to have a better view of their demographics and of the most recent trends in population change. From a qualitative point of view, this work showed that Arizona's SPRs fit well under the sociocultural paradigm of the SPR concept that highlights their distinct lifestyle (aka Vidal de la Blache's "genre de vie").

In fact, talking with Arizona's SPR inhabitants provided a picture of their life where distance, remoteness, and isolation impose themselves as an ever-present part of everyday life and form an important basis for their identity. Highlighting the distinctiveness and continuity relationships between place and identity pointed out by Twigger-Ross and Uzzell (1996), these people are not living in these settings despite isolation and harshness but because of those very elements, which define them and compound their relationship to place. They see self-reliance and a special connection with the environment as a fundamental difference between them and other, more integrated, regions and social groups, and they are fully aware that this makes them singular, acknowledging, "It's not for everybody."

Applying the SPR framework to Arizona shows that its heuristic potential is important and relevant for the conterminous United States, as Lonsdale and Holmes (1981) already perceived. It also offers new cross-continent comparisons and contributes to the enhancement of the SPR as a specific geographical and social environment. It also shows how this framework articulates with other discussions such as the relationship between place and identity. Finally, a subtle understanding of SPRs' social configuration allows for a better understanding of mounting environmental conflicts over land management in remote areas.

Because SPRs still cover 59 percent of emerged lands worldwide, closer analyses of their social and geographical peculiarities are important to optimize the policies that are applied to them. This is especially important because they are increasingly seen as places where climate change mitigation and other environmental actions need to be implemented (Brondizio and Le Tourneau 2016), leading to drastic changes and challenges for their inhabitants.

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Notes

1. Understanding that such values are time and place dependent.
2. One can also note that in 2010 about 60 percent of the state was covered by rural blocks with no population at all, showing the extent of open spaces in Arizona.
3. This is why census blocks and block groups are used in this work.
4. Data set produced by Arizona Department of Transportation, actualized through 2020.
5. At the time this article was submitted, 2020 results are limited to global head count and race breakdown, which does not provide all the information used in our analysis. When possible, 2020 data have been used.
6. "A person's experience of psychological bonds with a specific locale(s)—the ideas, feelings, and behavioral dispositions that relate a person to the tangible home surroundings—may generalize to the experience of psychological bonds with that type of locale" (Feldman 1990, 191; cited in Petite and Debarbieux 2013).

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