

# Atlas of Health Indicators in the Redwood Coast Region



By The California Center for Rural Policy



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By The California Center for Rural Policy at Humboldt State University



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The California Center for Rural Policy at Humboldt State University is a research center committed to informing policy, building community, and promoting the health and well-being of people and environments.



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## Introduction

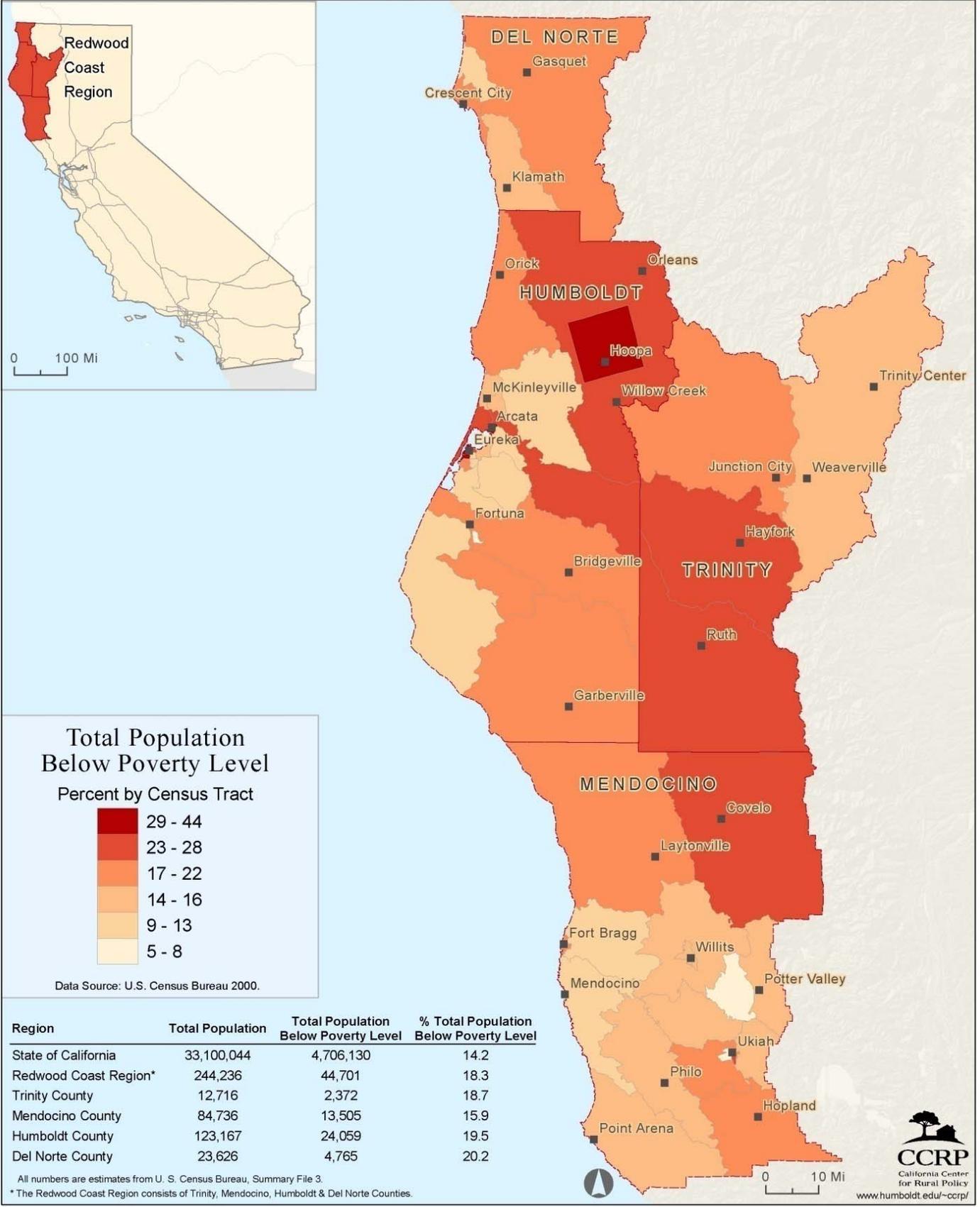
Maps are increasingly being used to understand connections between human health and physical and social environments.<sup>1,2,3</sup> A geographic information system (GIS) is a computer system for analyzing and mapping variables.<sup>2</sup> Mapping health and social indicators can assist with understanding issues faced by local communities, highlighting assets, localizing areas of highest need and targeting resources and policies aimed at ameliorating problems.

This atlas contains a collection of GIS maps produced from research projects conducted by the California Center for Rural Policy (CCRP) at Humboldt State University. All of the GIS maps were produced by the Institute for Spatial Analysis at Humboldt State University.

This atlas contains three sections:

- 1) GIS maps showing the distribution of poverty in Del Norte, Humboldt, Trinity and Mendocino counties (collectively known as the Redwood Coast Region). These maps were created using U.S. Census, 2000 data. For more information about poverty in the Redwood Coast Region visit <http://www.humboldt.edu/~ccrp/>
- 2) GIS maps showing various health indicators in the Redwood Coast Region. These maps were created using data from the Rural Health Information Survey (RHIS), which was conducted by CCRP in the fall of 2006. The purpose of the survey was to assess health disparities, access and utilization of health care, and other determinants of health among residents in Del Norte, Humboldt, Trinity and Mendocino counties. The goal of the survey is to provide useful information for planning and policy development aimed at improving health in the region. A four-page self-administered survey was mailed to a random sample of adults in the four county region. A total of 2,950 surveys provided usable responses for analysis making this the largest survey to ever be conducted in this rural region of California. For more information about the Rural Health Information Survey visit <http://www.humboldt.edu/~ccrp/>
- 3) GIS maps showing various health and social indicators for the Latino population in Del Norte, Humboldt and Mendocino Counties. These maps were created using data from the Rural Latino Project, which was conducted by CCRP in 2006. The Rural Latino Project focuses on the health needs, coping strategies and experiences of Latinos in Del Norte, Humboldt, and Mendocino counties. Multiple research methods were employed including: key-informant interviews, content analysis of newspaper articles, field research, and spatial analysis of primary and secondary data. Qualitative, key-informant interviews were conducted with 54 adults in Humboldt County ( $n = 20$ ), Mendocino County ( $n = 20$ ), and Del Norte County ( $n = 14$ ). Key informants were people who work closely with the Latino community, health and social service providers who serve Latinos, and Latino community leaders from the three counties. For more information about the Rural Latino Project visit <http://www.humboldt.edu/~ccrp/>

# Total Population in Poverty, 2000: Redwood Coast Region



## Total Population Below Poverty Level

Percent by Census Tract

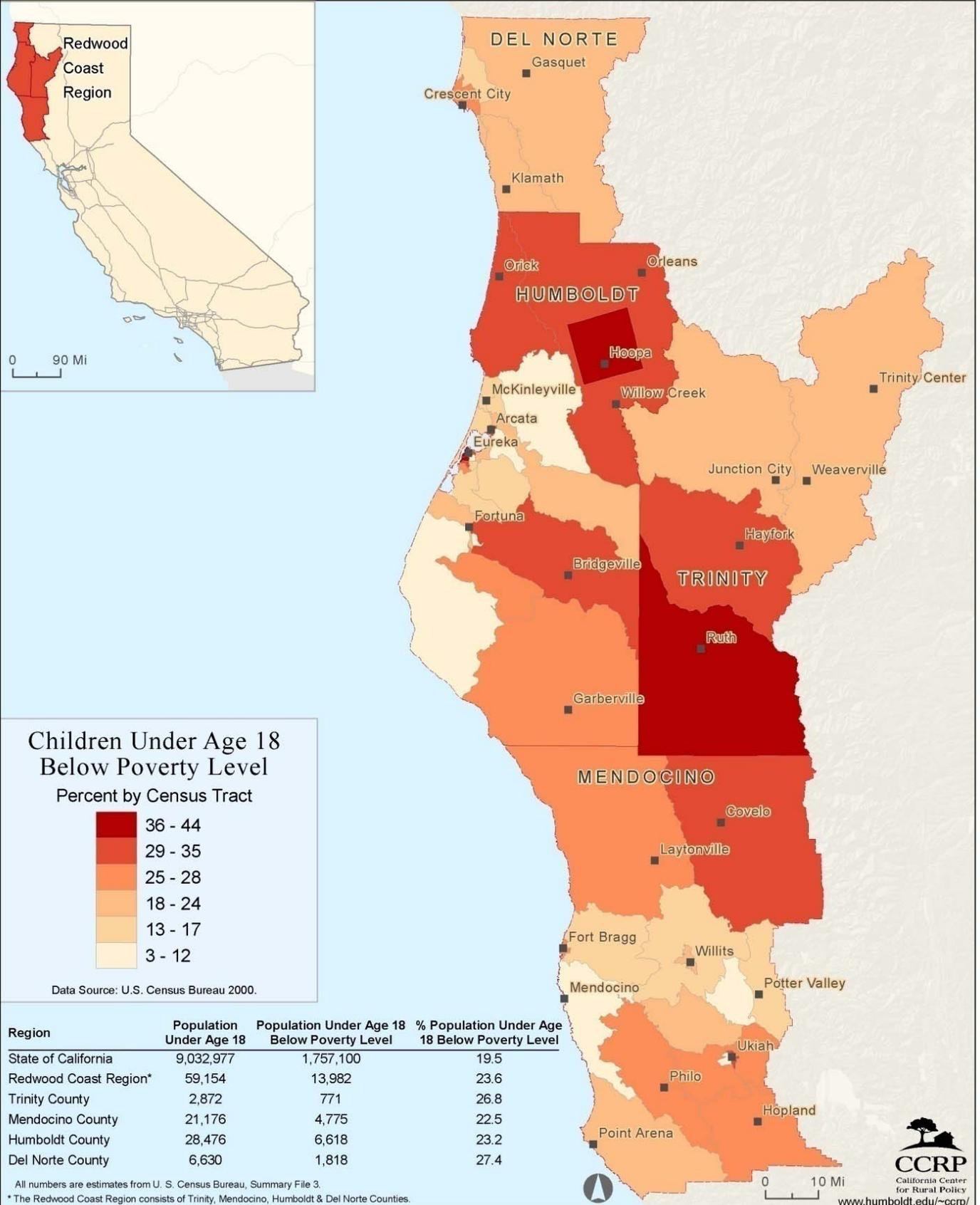


Data Source: U.S. Census Bureau 2000.

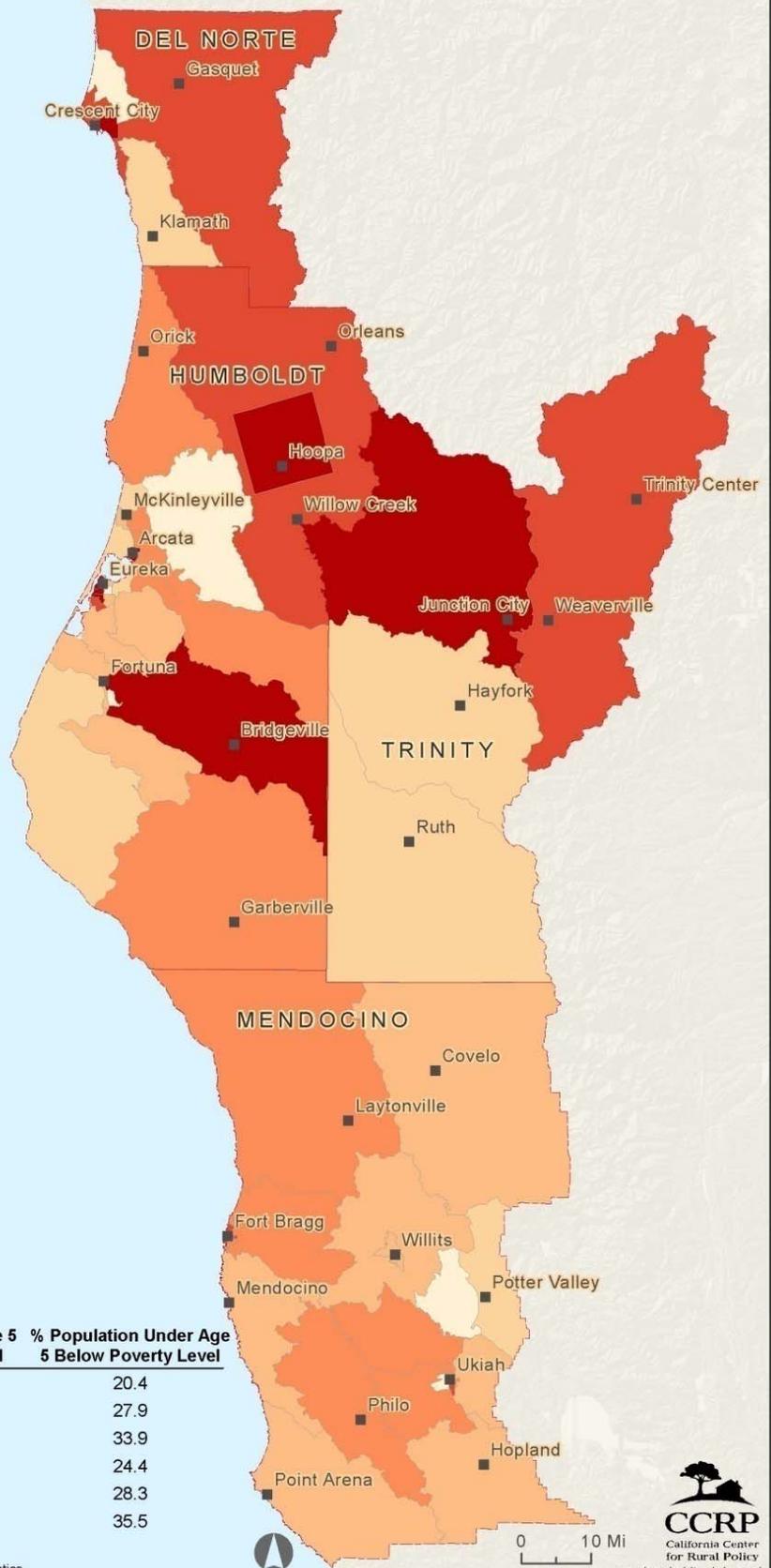
Region	Total Population	Total Population Below Poverty Level	% Total Population Below Poverty Level
State of California	33,100,044	4,706,130	14.2
Redwood Coast Region*	244,236	44,701	18.3
Trinity County	12,716	2,372	18.7
Mendocino County	84,736	13,505	15.9
Humboldt County	123,167	24,059	19.5
Del Norte County	23,626	4,765	20.2

All numbers are estimates from U. S. Census Bureau, Summary File 3.  
 \* The Redwood Coast Region consists of Trinity, Mendocino, Humboldt & Del Norte Counties.

# Children Under Age 18 in Poverty, 2000: Redwood Coast Region

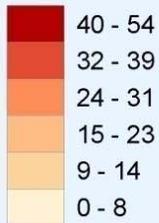


# Children Under Age 5 in Poverty, 2000: Redwood Coast Region



## Children Under Age Five Below Poverty Level

Percent by Census Tract



Data Source: U.S. Census Bureau 2000.

Region	Population Under Age 5	Population Under Age 5 Below Poverty Level	% Population Under Age 5 Below Poverty Level
State of California	2,398,724	489,256	20.4
Redwood Coast Region*	13,898	3,876	27.9
Trinity County	510	173	33.9
Mendocino County	4960	1,212	24.4
Humboldt County	6,956	1,969	28.3
Del Norte County	1,472	522	35.5

All numbers are estimates from U. S. Census Bureau, Summary File 3.

\* The Redwood Coast Region consists of Trinity, Mendocino, Humboldt & Del Norte Counties.

# CCRP Rural Health Information Survey: Percent of Respondents Without Adequate Health Care Access<sup>1</sup>, 2006



Study Methods: The Rural Health Information Survey (RHIS) was conducted by the California Center for Rural Policy in the fall of 2006. A total of 23,606 surveys were mailed to a random sample of post office box holders in the four counties of Del Norte, Humboldt, Trinity and Mendocino. The total number of returned surveys was 3,003 for an overall response rate of 12.7%.

### Percent of Respondents Without Adequate Health Care Access, 2006

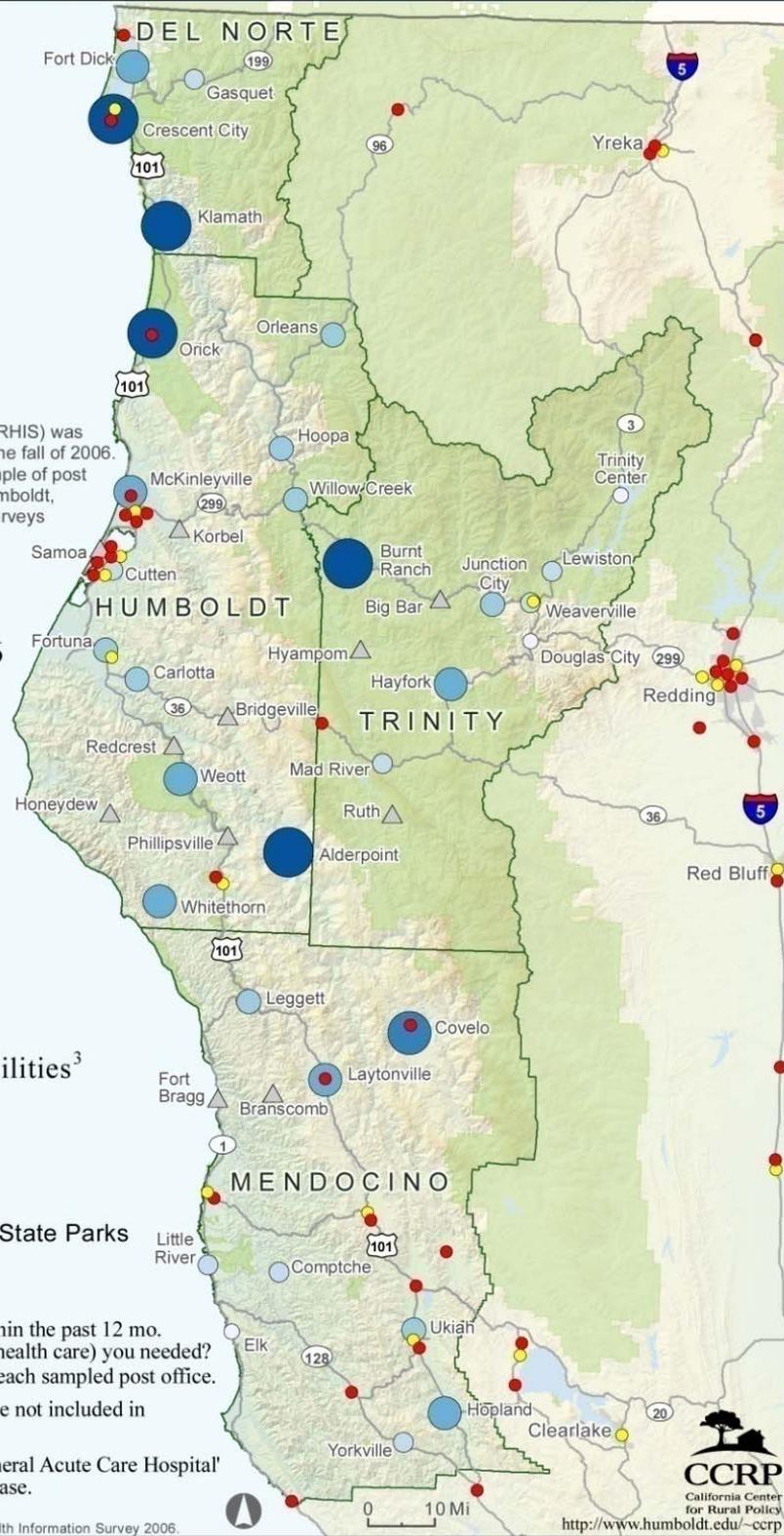
- 30 - 40
- 25 - 29
- 20 - 24
- 15 - 19
- 10 - 14
- 0 - 9
- Low sample size<sup>2</sup>

### OSHPD Licensed Health Care Facilities<sup>3</sup>

- General Acute Care Hospital
- Free & Community Clinics

### Public Lands

- National Forests, National & State Parks



<sup>1</sup> Data derived from RHIS survey question (4): Within the past 12 mo. were you able to get the health care (incl. mental health care) you needed? Percentages are shown for survey respondents of each sampled post office.

<sup>2</sup> Post offices with less than 20 survey responses were not included in analysis due to statistical instability.

<sup>3</sup> Facilities shown are those classified as either 'General Acute Care Hospital' or 'Free or Community Clinics' in OSHPD's database.

GIS and Cartography: R. Degagne (2007)  
Data Sources: ESRI; OSHPD; U.S. Postal Service; CCRP Rural Health Information Survey 2006.



# CCRP Rural Health Information Survey: Percent of Respondents Without Health Insurance<sup>1</sup>, 2006



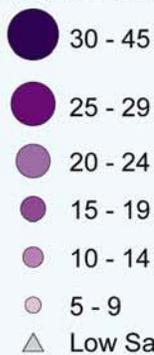
**Study Methods:** The Rural Health Information Survey (RHIS) was conducted by the California Center for Rural Policy in the fall of 2006. A total of 23,606 surveys were mailed to a random sample of post office box holders in the four counties of Del Norte, Humboldt, Trinity and Mendocino. The total number of returned surveys was 3,003 for an overall response rate of 12.7%.

### Total Population Below Poverty Level Percent by Census Tract



Data Source: U.S. Census Bureau 2000

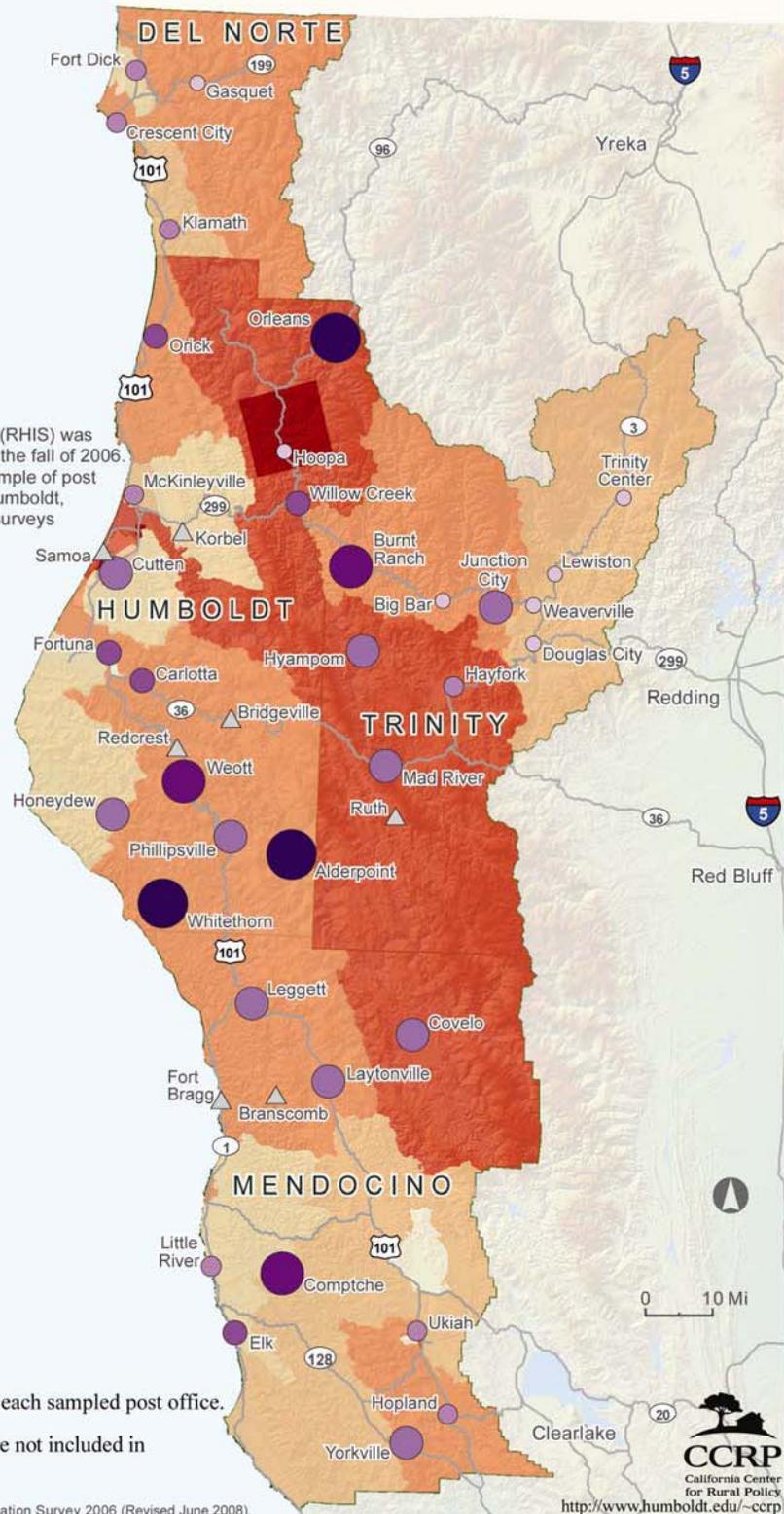
### Percent of Respondents Without Health Insurance



<sup>1</sup> Data derived from RHIS survey question (6):  
What types of health insurance do you have?  
Percentages are shown for survey respondents of each sampled post office.

<sup>2</sup> Post offices with less than 20 survey responses were not included in analysis due to statistical instability.

GIS and Cartography: R. Degagne and N. Ramirez (2008)  
Data Sources: ESRI; U.S. Postal Service; CCRP Rural Health Information Survey 2006 (Revised June 2008).



# CCRP Rural Health Information Survey: Percent of Respondents With Transportation Impacting Health Needs<sup>1</sup>, 2006



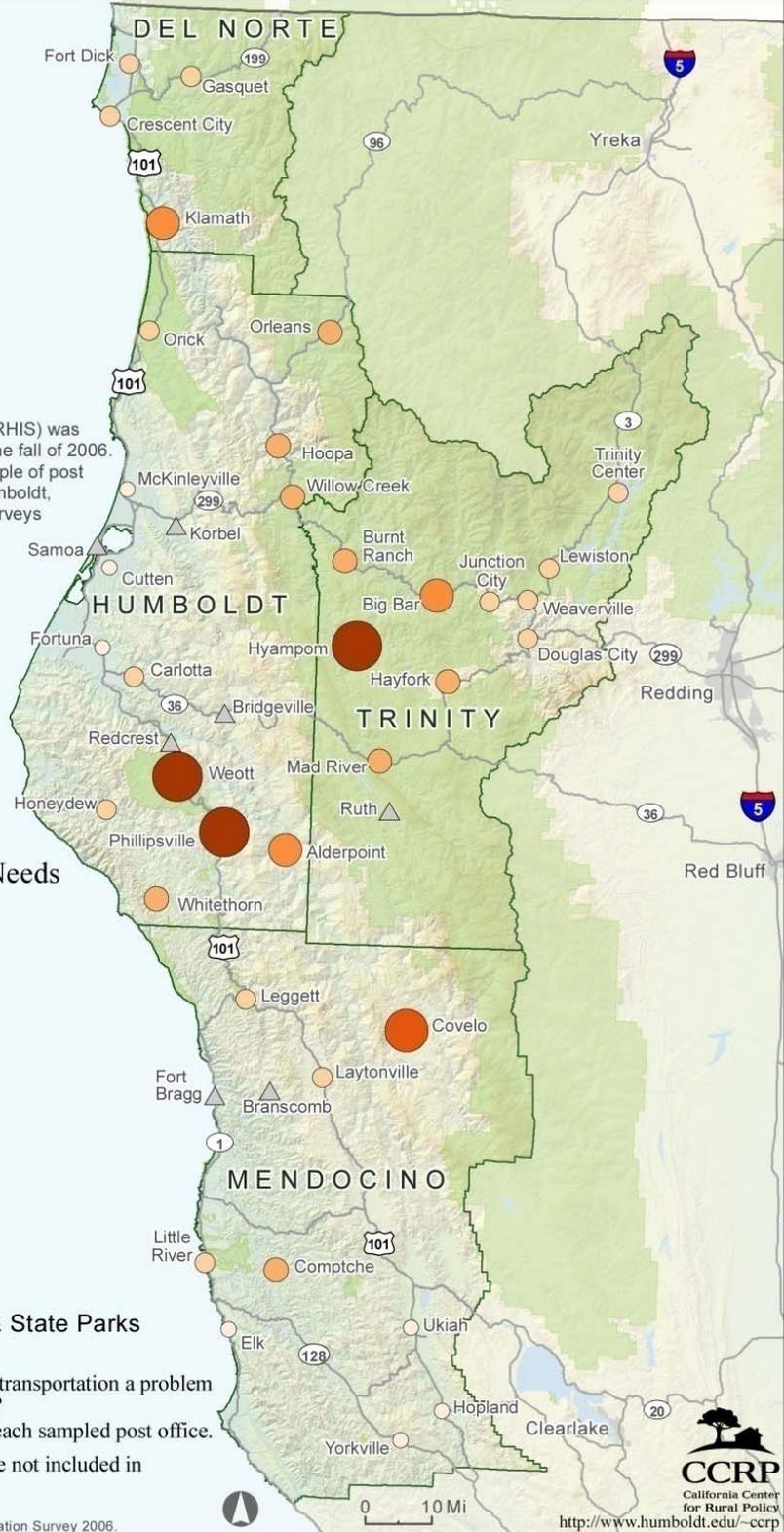
**Study Methods:** The Rural Health Information Survey (RHIS) was conducted by the California Center for Rural Policy in the fall of 2006. A total of 23,606 surveys were mailed to a random sample of post office box holders in the four counties of Del Norte, Humboldt, Trinity and Mendocino. The total number of returned surveys was 3,003 for an overall response rate of 12.7%.

### Percent of Respondents With Transportation Impacting Health Needs

- 35 - 45
- 30 - 34
- 25 - 29
- 20 - 24
- 10 - 19
- 6 - 9
- Low sample size<sup>2</sup>

### Public Lands

- National Forests, National & State Parks



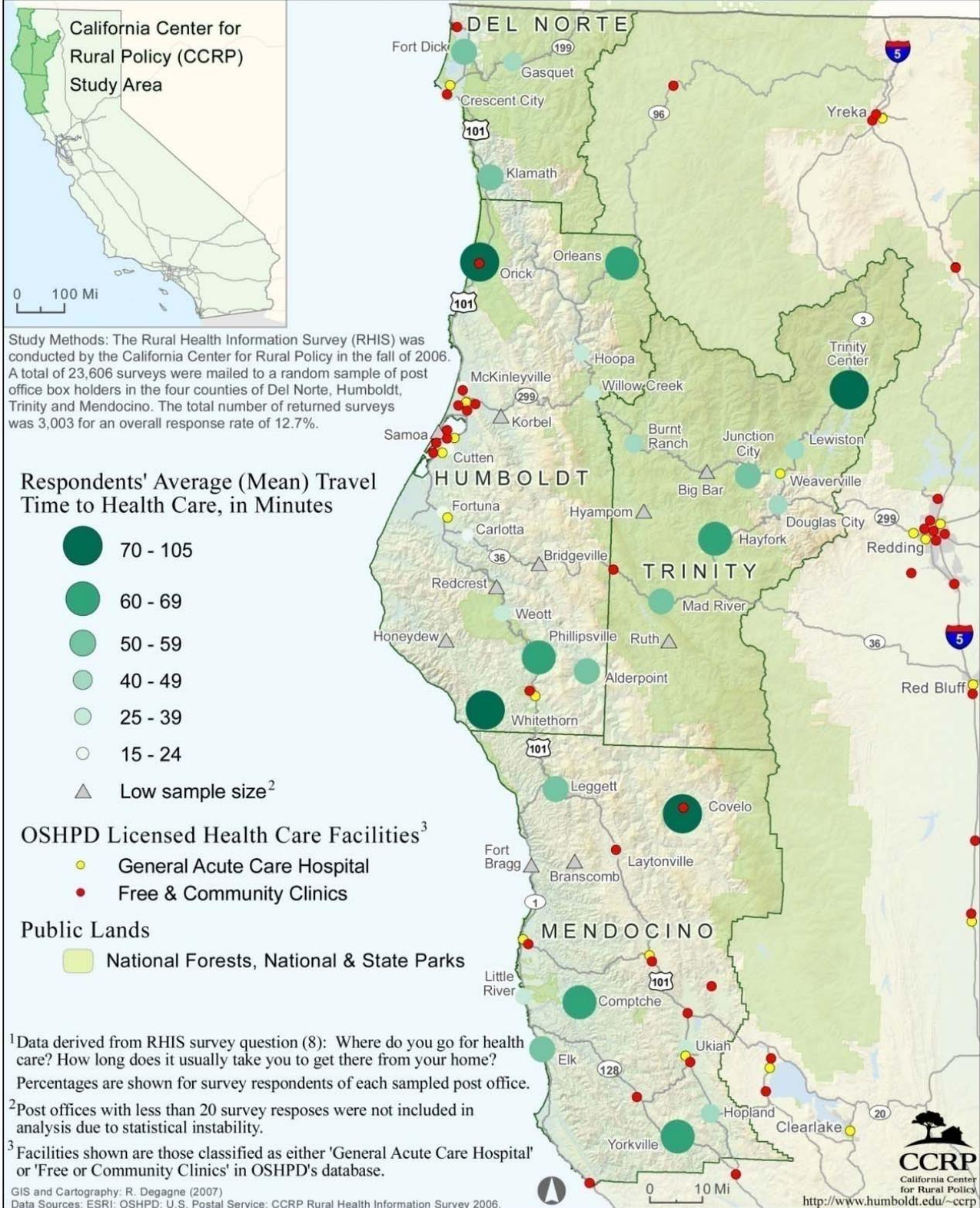
<sup>1</sup> Data derived from RHIS survey question (49): Is transportation a problem in meeting the health needs of you or your family? Percentages are shown for survey respondents of each sampled post office.

<sup>2</sup> Post offices with less than 20 survey responses were not included in analysis due to statistical instability.

GIS and Cartography: R. Degagne (2007)  
Data Sources: ESRI; U.S. Postal Service; CCRP Rural Health Information Survey 2006.



# CCRP Rural Health Information Survey: Respondents' Average Travel Time to Health Care<sup>1</sup>, 2006



# CCRP Rural Health Information Survey: Percent of Respondents With Very Low Food Security<sup>1</sup>, 2006



Study Methods: The Rural Health Information Survey (RHIS) was conducted by the California Center for Rural Policy in the fall of 2006. A total of 23,606 surveys were mailed to a random sample of post office box holders in the four counties of Del Norte, Humboldt, Trinity and Mendocino. The total number of returned surveys was 3,003 for an overall response rate of 12.7%.

### Percent of Respondents With Very Low Food Security

- ▲ Low sample size<sup>2</sup>
- 16 - 25
- 11 - 15
- 9 - 10
- 6 - 8
- 3 - 5
- 2

### Total Population Below Poverty Level Percent by Census Tract



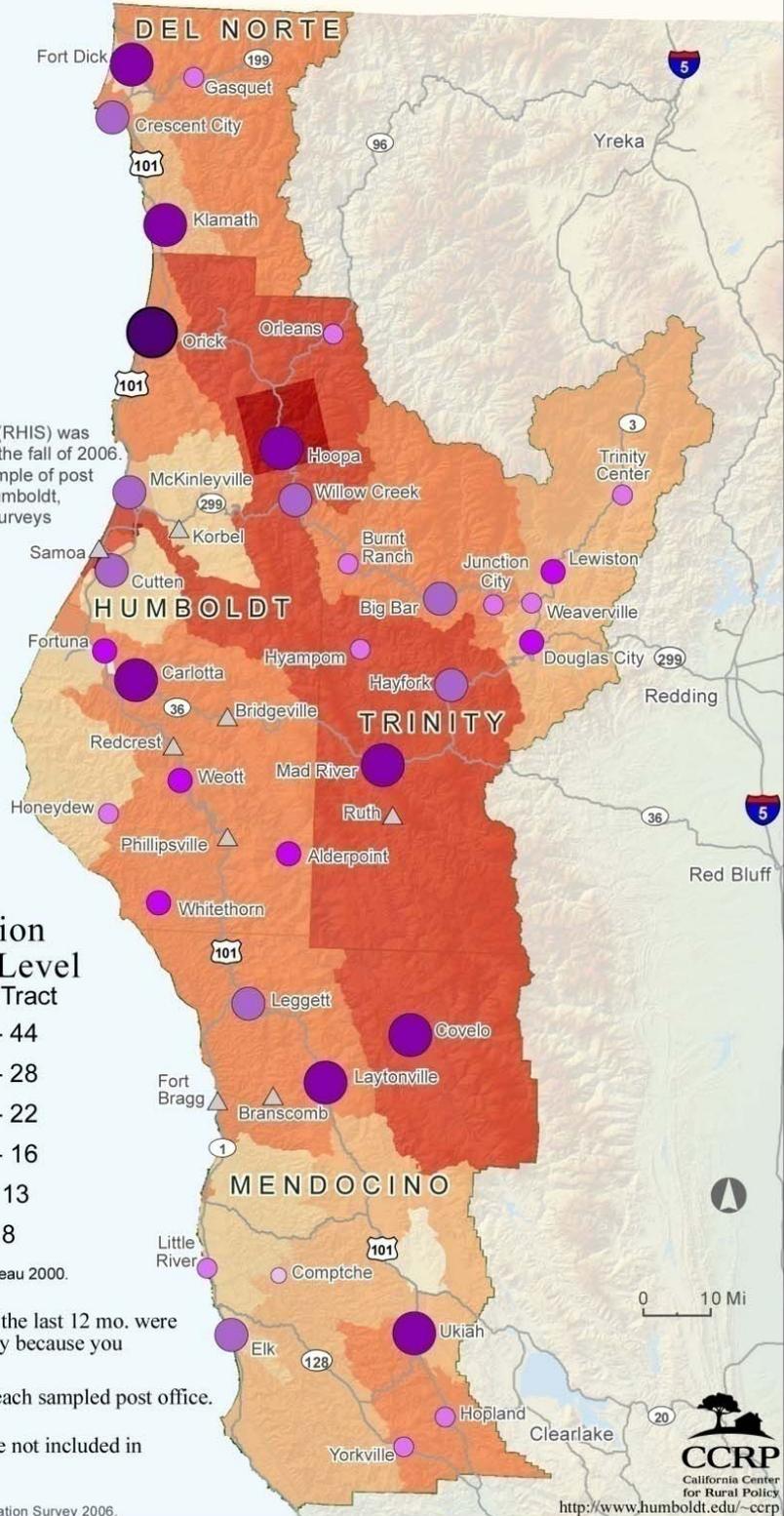
Data Source: U.S. Census Bureau 2000.

<sup>1</sup>Data derived from RHIS survey question (31): In the last 12 mo. were you or people living in your household ever hungry because you couldn't afford enough food?

Percentages are shown for survey respondents of each sampled post office.

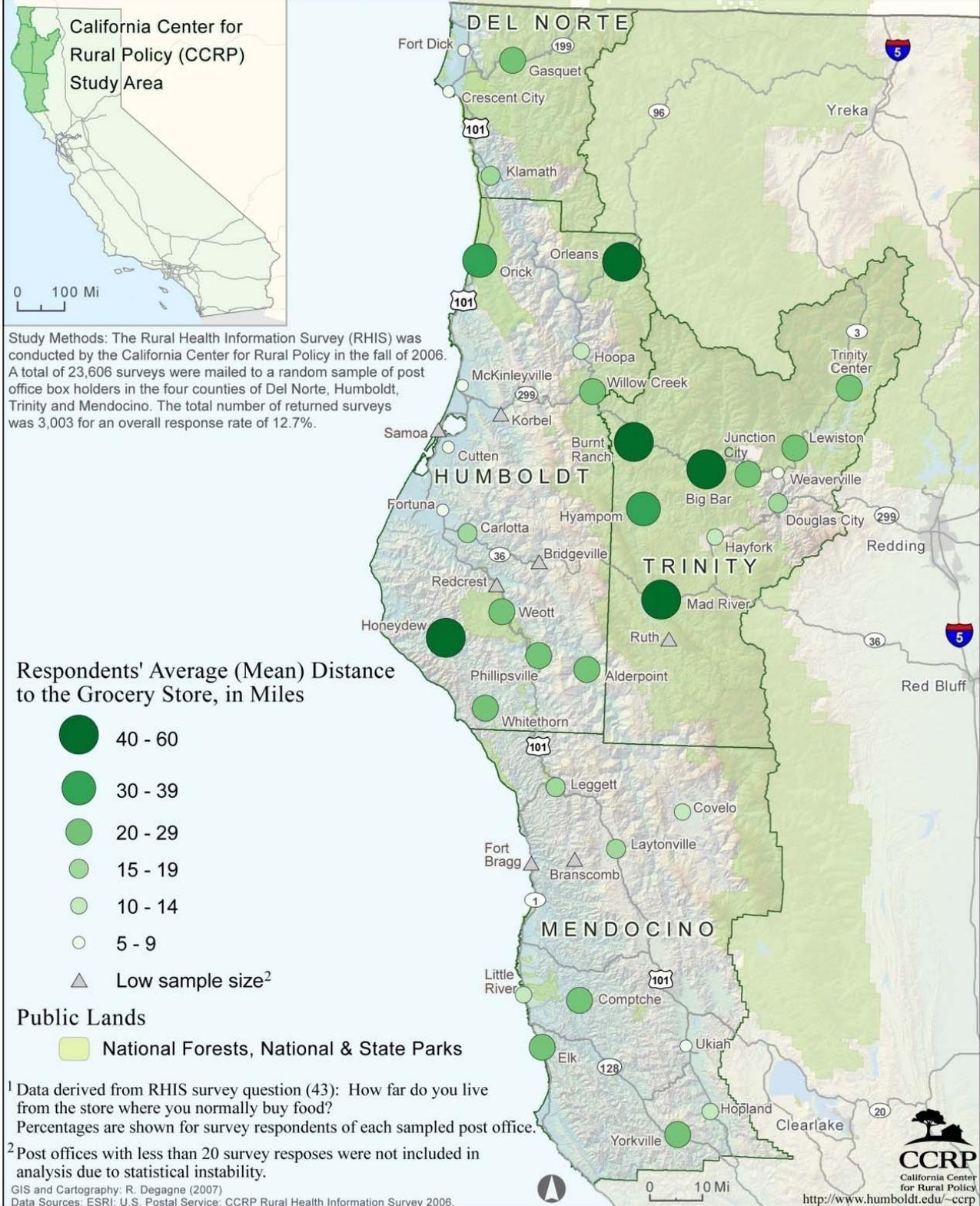
<sup>2</sup>Post offices with less than 20 survey responses were not included in analysis due to statistical instability.

GIS and Cartography: R. Degagne and N. Ramirez (2008)  
Data Sources: ESRI; U.S. Postal Service; CCRP Rural Health Information Survey 2006.



<http://www.humboldt.edu/~ccrp>

# CCRP Rural Health Information Survey: Respondents' Average Distance to the Grocery Store<sup>1</sup>, 2006



# CCRP Rural Health Information Survey: Percent of Respondents Without First Aid Training<sup>1</sup>, 2006



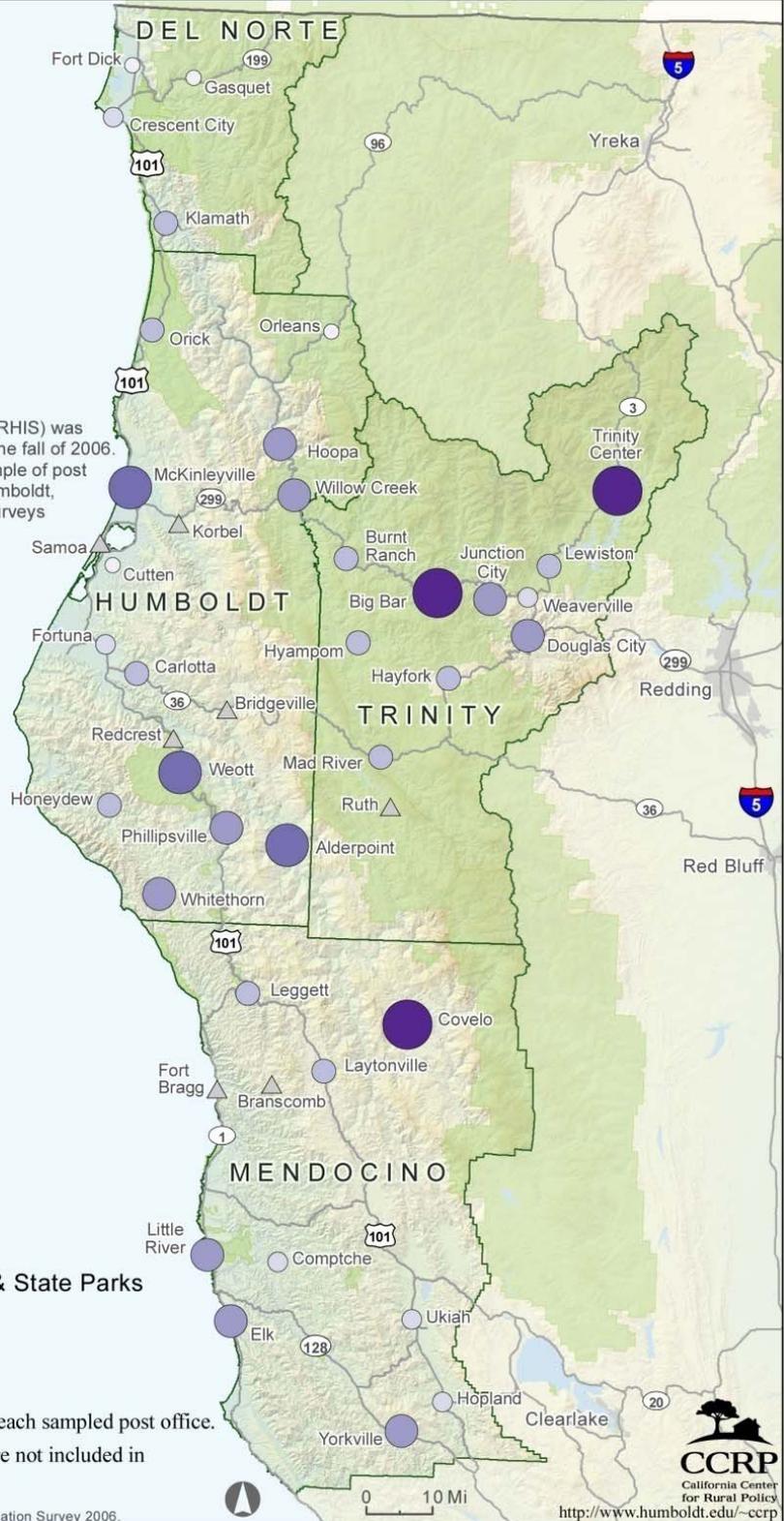
Study Methods: The Rural Health Information Survey (RHIS) was conducted by the California Center for Rural Policy in the fall of 2006. A total of 23,606 surveys were mailed to a random sample of post office box holders in the four counties of Del Norte, Humboldt, Trinity and Mendocino. The total number of returned surveys was 3,003 for an overall response rate of 12.7%.

### Percent of Respondents Without First Aid Training

- 60 - 65
- 55 - 59
- 50 - 54
- 45 - 49
- 40 - 44
- 25 - 39
- Low sample size<sup>2</sup>

### Public Lands

- National Forests, National & State Parks



<sup>1</sup>Data derived from RHIS survey question (50):  
Do you have training in first aid?  
Percentages are shown for survey respondents of each sampled post office.

<sup>2</sup>Post offices with less than 20 survey responses were not included in analysis due to statistical instability.

GIS and Cartography: R. Degagne (2007)  
Data Sources: ESRI; U.S. Postal Service; CCRP Rural Health Information Survey 2006.

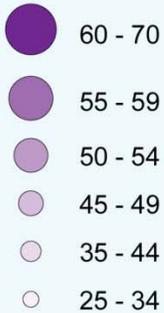


# CCRP Rural Health Information Survey: Percent of Respondents Without CPR Training<sup>1</sup>, 2006



Study Methods: The Rural Health Information Survey (RHIS) was conducted by the California Center for Rural Policy in the fall of 2006. A total of 23,606 surveys were mailed to a random sample of post office box holders in the four counties of Del Norte, Humboldt, Trinity and Mendocino. The total number of returned surveys was 3,003 for an overall response rate of 12.7%.

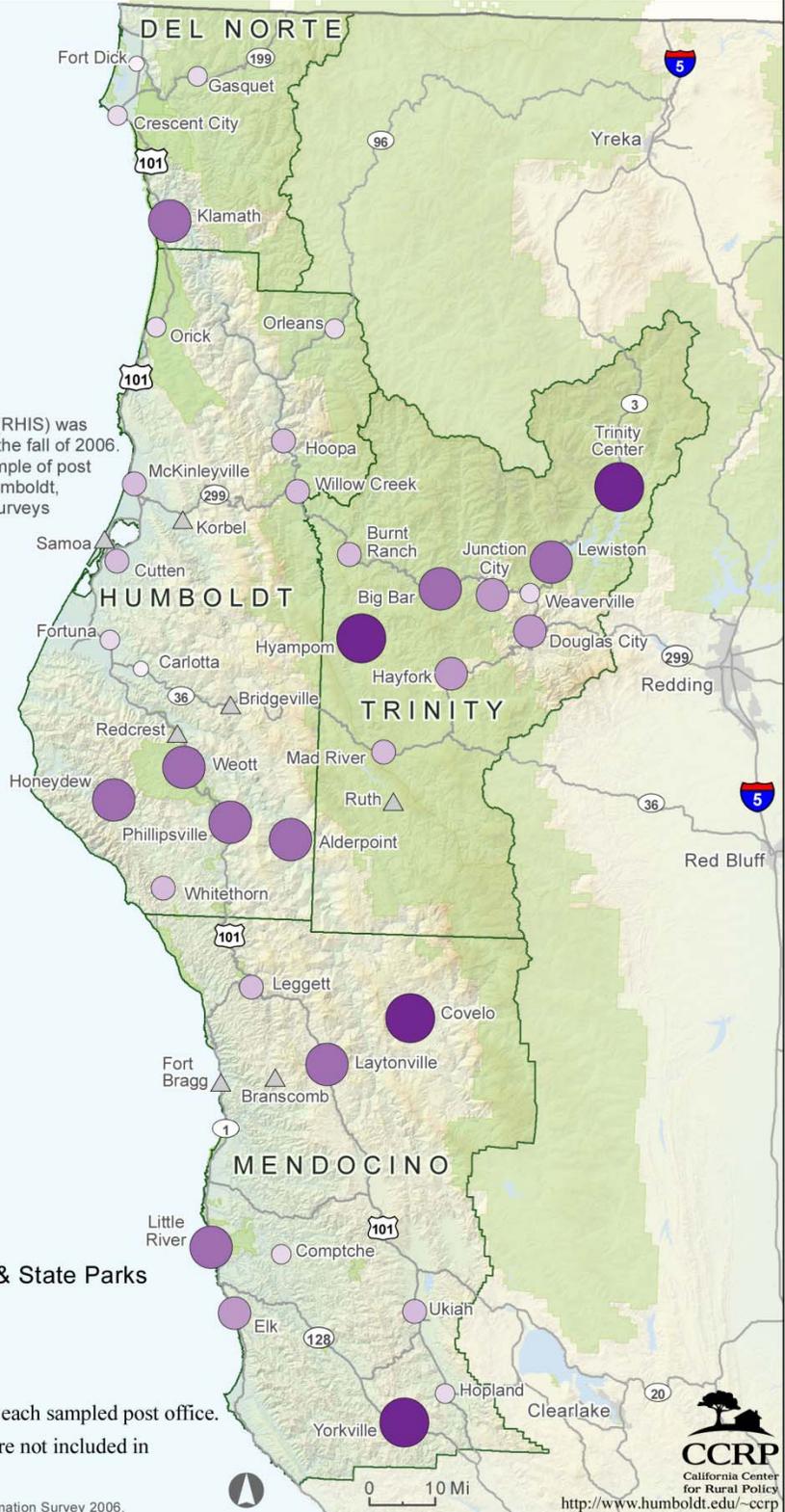
### Percent of Respondents Without CPR Training



▲ Low sample size<sup>2</sup>

### Public Lands

■ National Forests, National & State Parks



<sup>1</sup>Data derived from RHIS survey question (50): Do you have training in CPR? Percentages are shown for survey respondents of each sampled post office.

<sup>2</sup>Post offices with less than 20 survey responses were not included in analysis due to statistical instability.

GIS and Cartography: R. Degagne (2007)  
Data Sources: ESRI, U.S. Postal Service, CCRP Rural Health Information Survey 2006.



# CCRP Rural Health Information Survey: Percent of Respondents Without In-Home Internet Access<sup>1</sup>, 2006



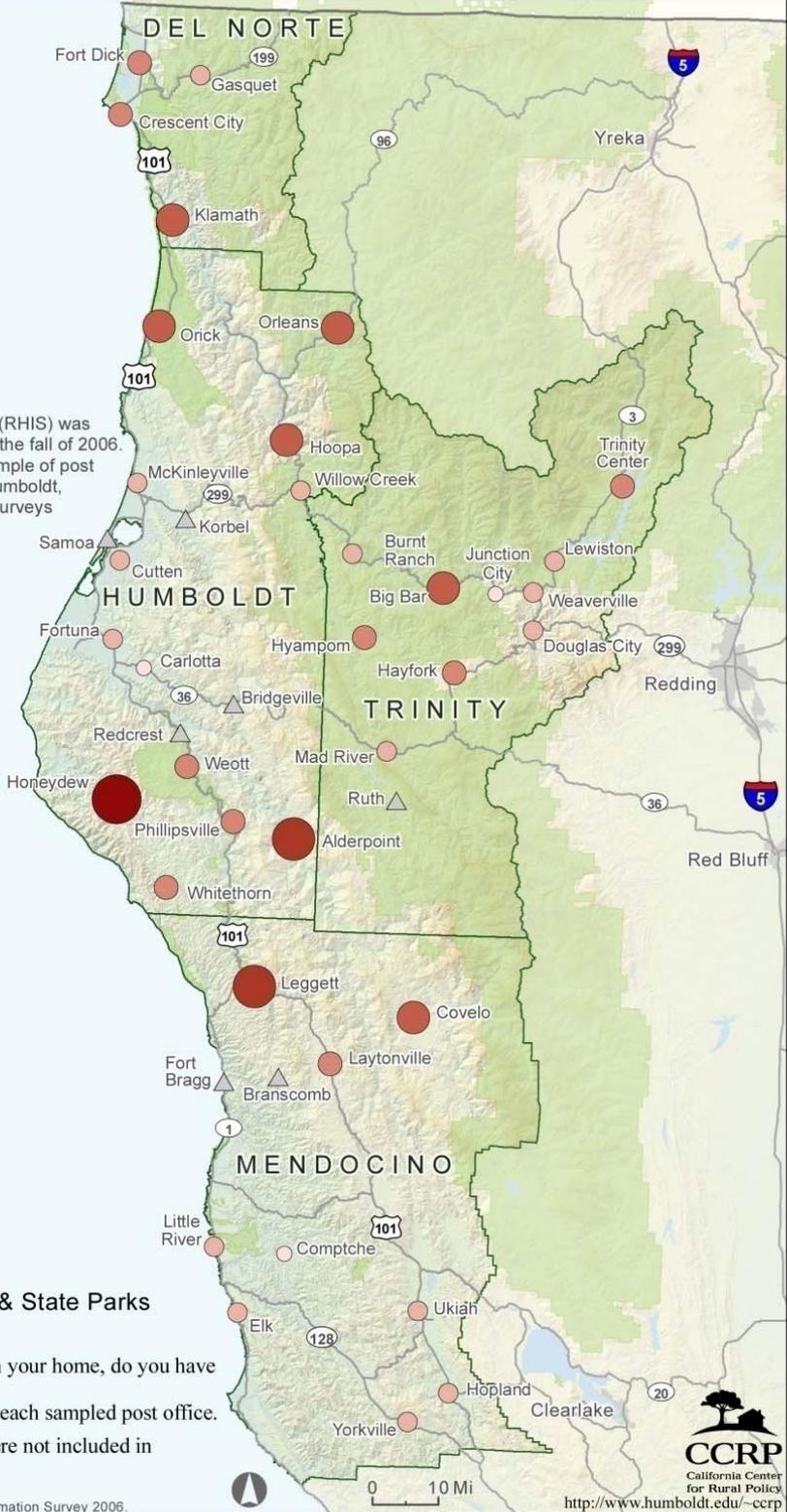
Study Methods: The Rural Health Information Survey (RHIS) was conducted by the California Center for Rural Policy in the fall of 2006. A total of 23,606 surveys were mailed to a random sample of post office box holders in the four counties of Del Norte, Humboldt, Trinity and Mendocino. The total number of returned surveys was 3,003 for an overall response rate of 12.7%.

### Percent of Respondents Without In-Home Internet Access, 2006

- 60 - 70
- 50 - 59
- 40 - 49
- 30 - 39
- 20 - 29
- 14 - 20
- Low sample size<sup>2</sup>

### Public Lands

- National Forests, National & State Parks



<sup>1</sup>Data derived from RHIS survey question (37): In your home, do you have Internet access? Percentages are shown for survey respondents of each sampled post office.

<sup>2</sup>Post offices with less than 20 survey responses were not included in analysis due to statistical instability.

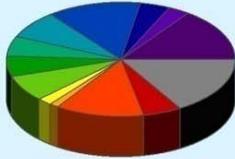
GIS and Cartography: R. Degagne (2007)  
Data Sources: ESRI; U.S. Postal Service; CCRP Rural Health Information Survey 2006.



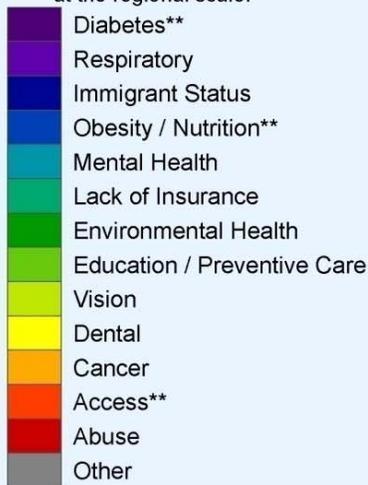
# Health Issues\* Affecting the Latino Community of Del Norte, Mendocino & Humboldt Counties, CA



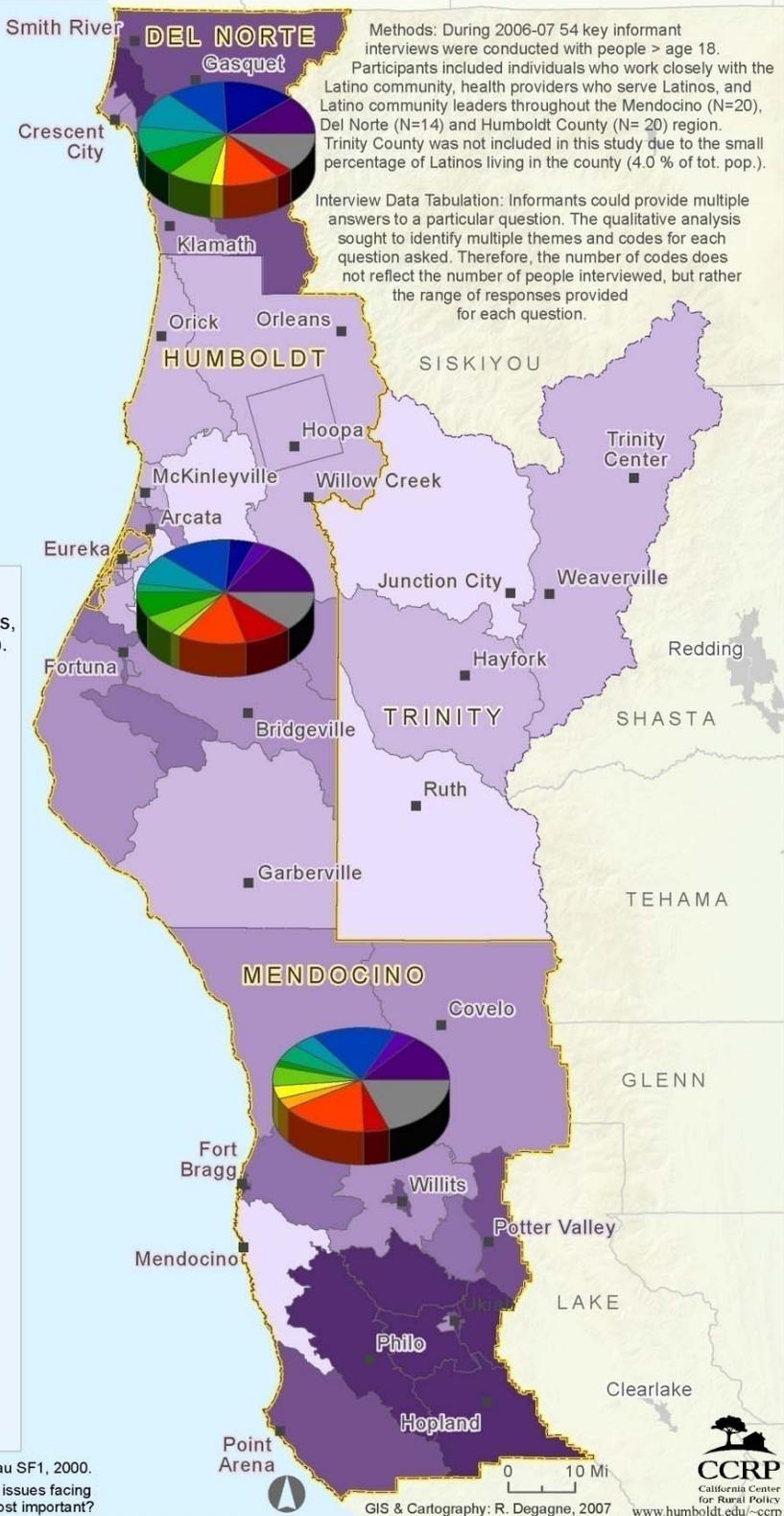
Health Issues at a Regional Scale:  
(Sampled counties are shown in yellow.)



**Health Issues Affecting Latinos**  
Represented as a percentage of total responses, grouped regionally (above) & by county (right).  
A double asterisk indicates the top 3 issues at the regional scale.

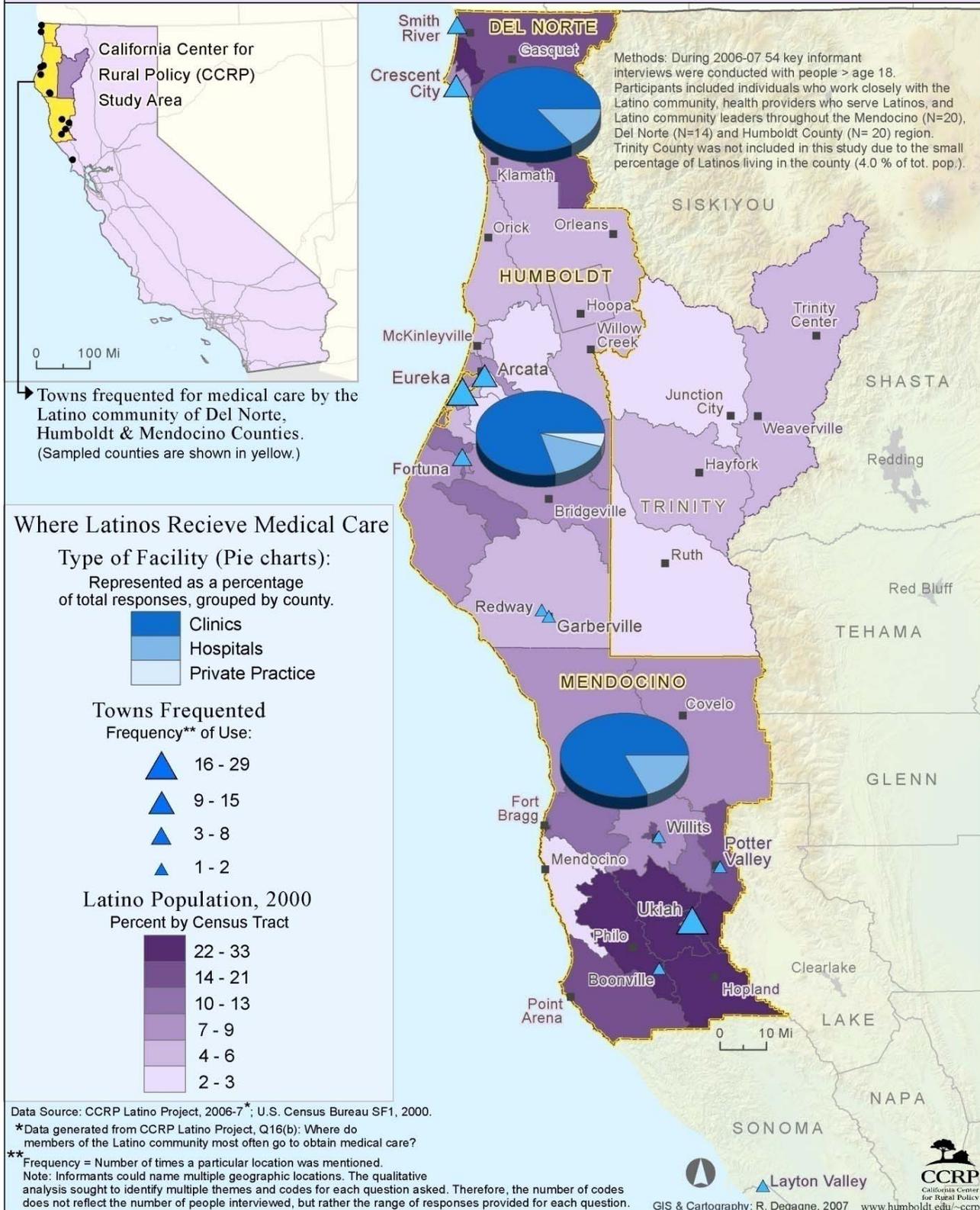


**Latino Population, 2000**  
Percent by Census Tract

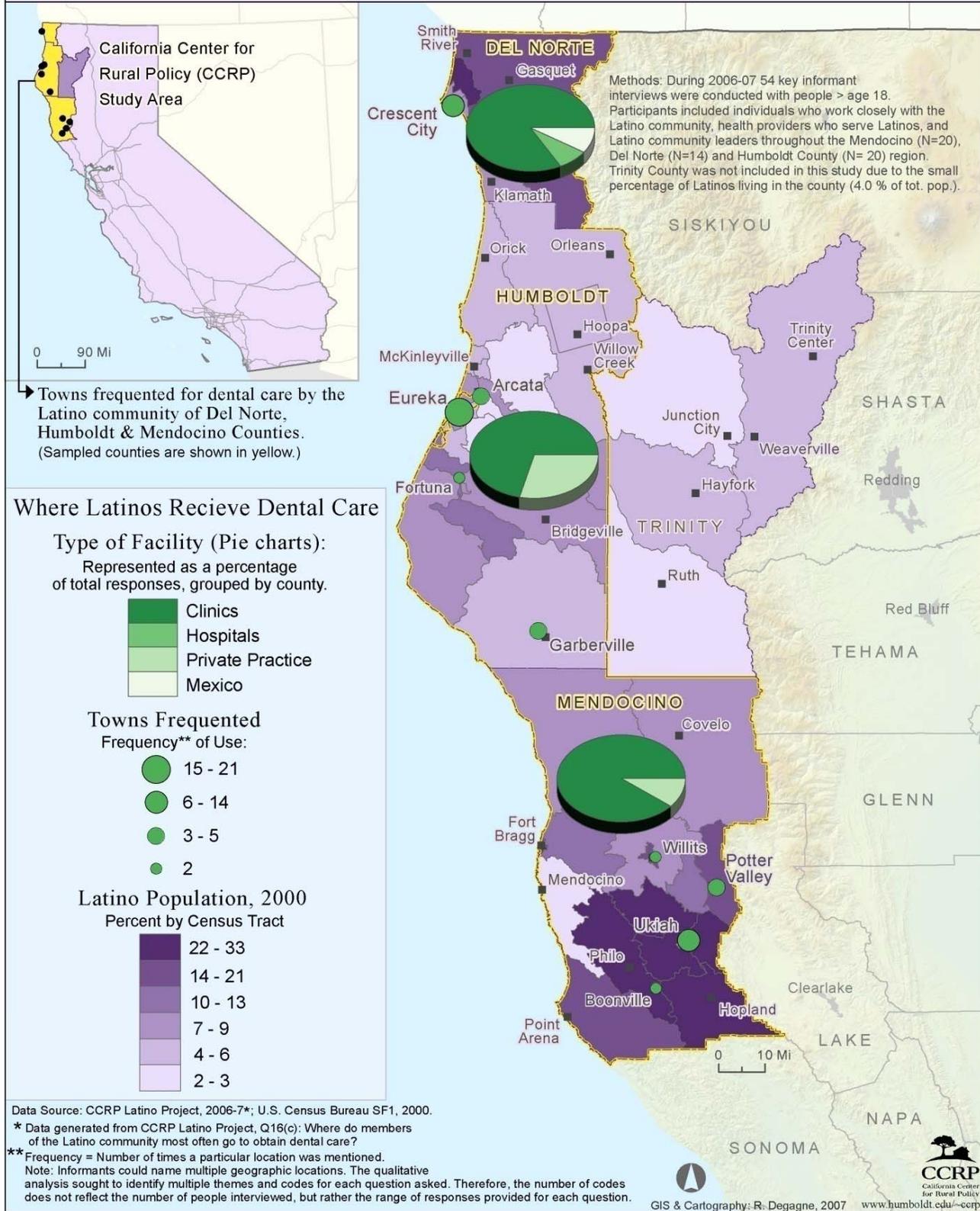


Data Source: CCRP Latino Project, 2006-7\*; U.S. Census Bureau SF1, 2000.  
\*Data generated from CCRP Latino Project, Q18: Of the health issues facing the Latino community in your area, which do you feel are the most important?

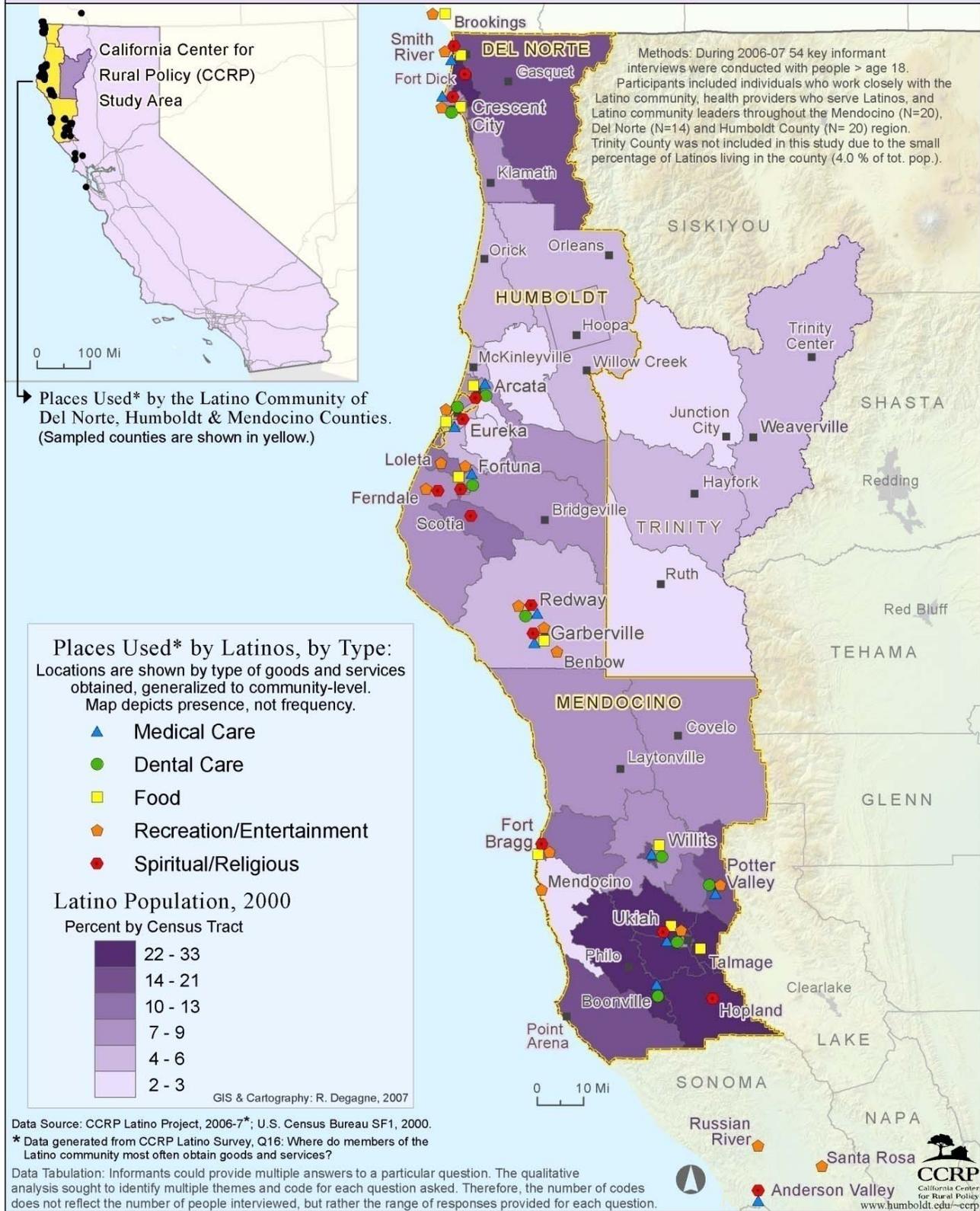
# Places Frequented for Medical Care\* by the Latino Community of Del Norte, Humboldt & Mendocino Counties, CA



# Places Frequented for Dental Care\* by the Latino Community of Del Norte, Humboldt & Mendocino Counties, CA



# Range of Places Used\* by the Latino Community of Del Norte, Humboldt & Mendocino Counties, CA



# Places Frequented for Food Services\* by the Latino Community of Del Norte, Humboldt & Mendocino Counties, CA



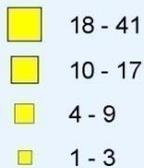
→ Towns frequented for food services by the Latino community of Del Norte, Humboldt & Mendocino Counties. (Sampled counties are shown in yellow.)

## Where Latinos Go for Food Services

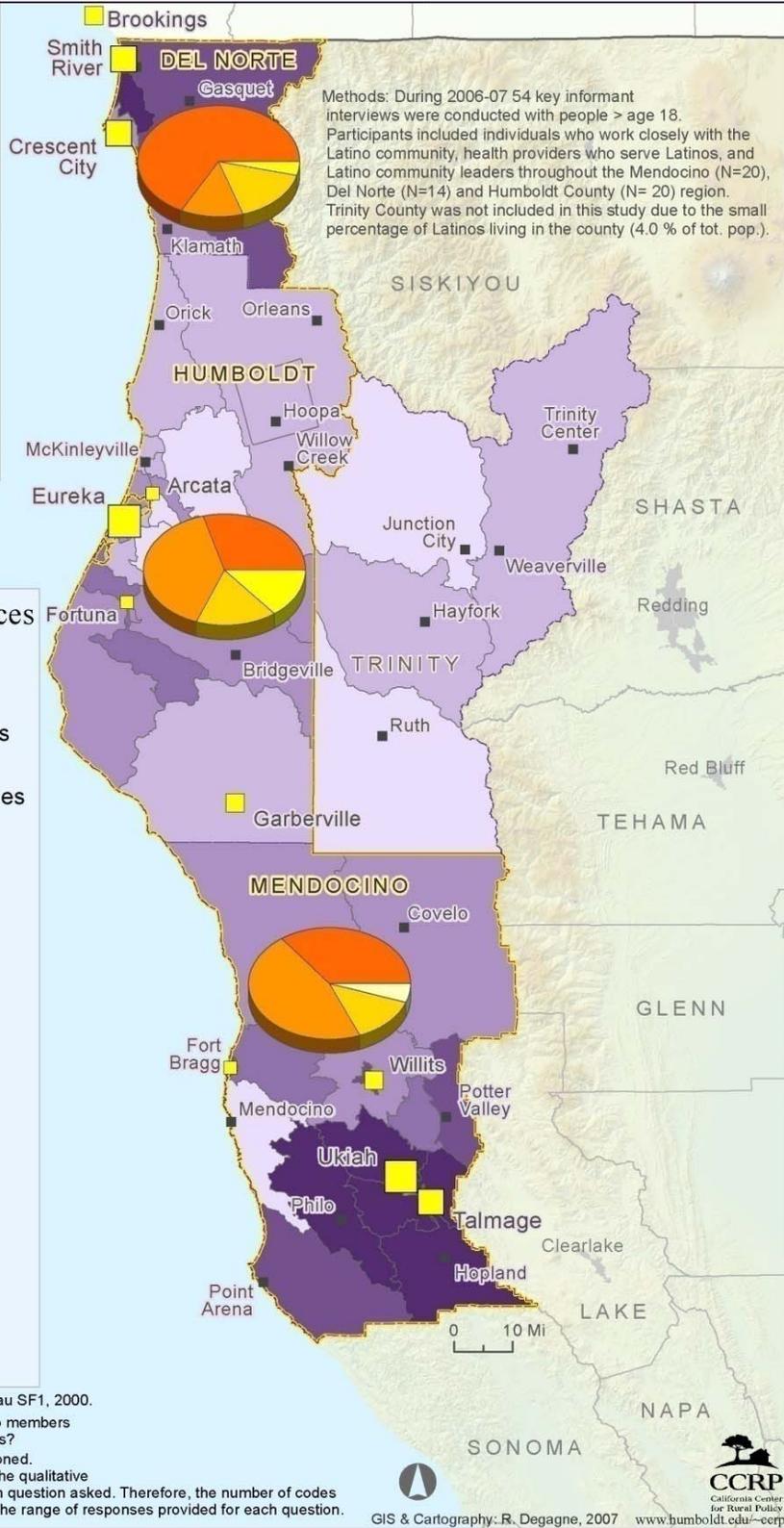
Type of Facility (Pie charts):  
Represented as a percentage of total responses, grouped by county.



Towns Frequented  
Frequency\*\* of Use:



Latino Population, 2000  
Percent by Census Tract



Data Source: CCRP Latino Project, 2006-7\*; U.S. Census Bureau SF1, 2000.

\* Data generated from CCRP Latino Project, Q16(a): Where do members of the Latino community most often go to obtain food services?

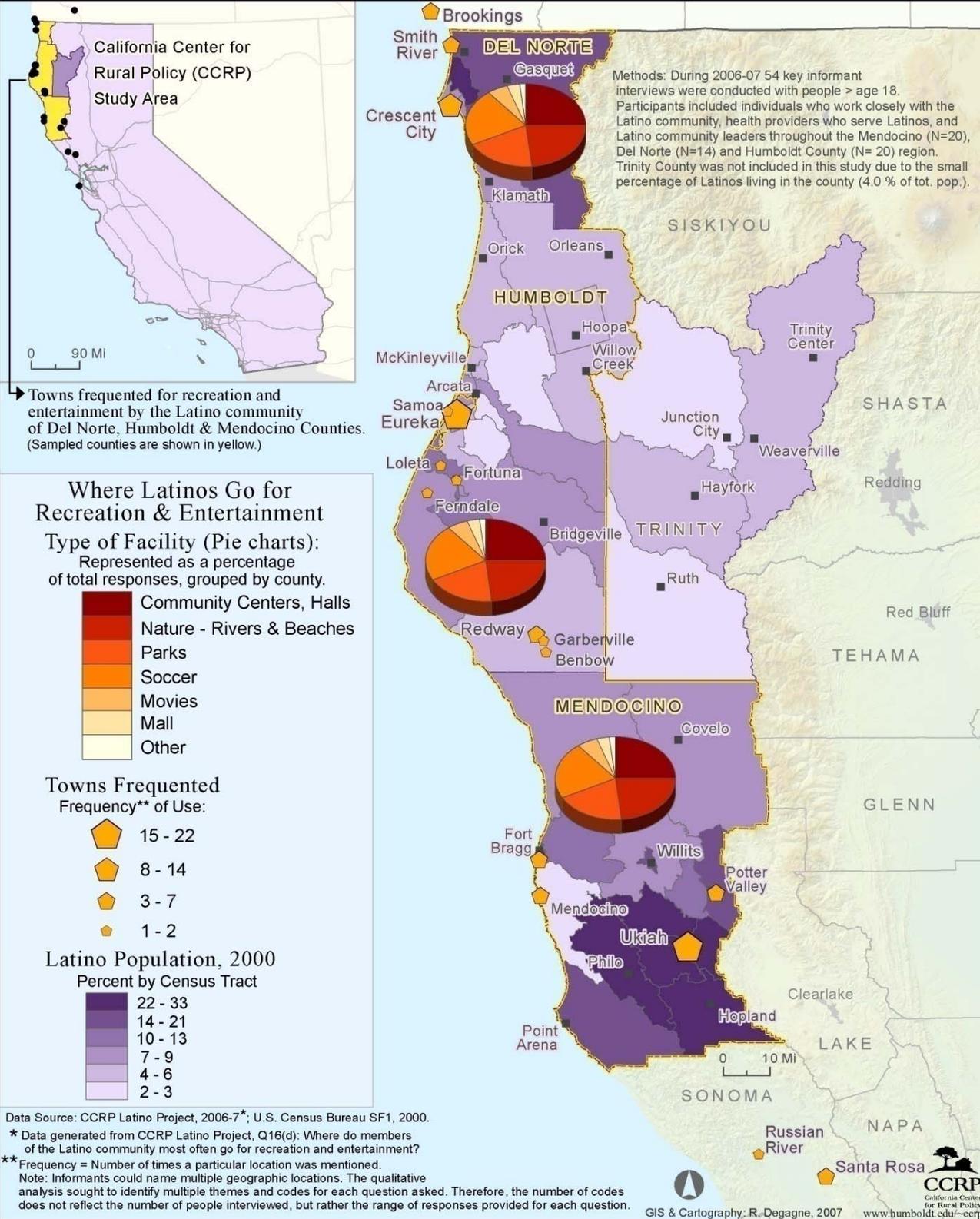
\*\* Frequency = Number of times a particular location was mentioned.  
Note: Informants could name multiple geographic locations. The qualitative analysis sought to identify multiple themes and codes for each question asked. Therefore, the number of codes does not reflect the number of people interviewed, but rather the range of responses provided for each question.



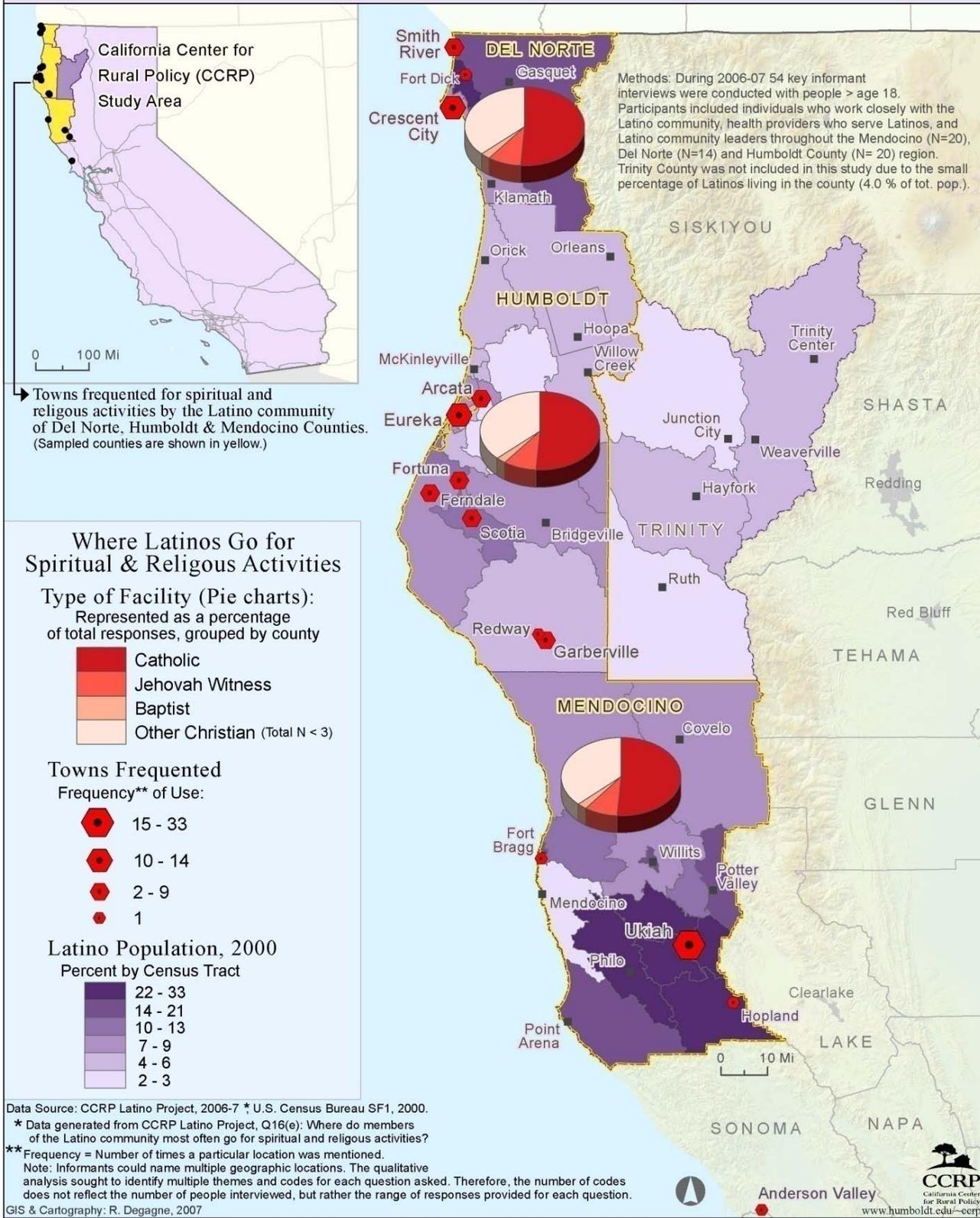
GIS & Cartography: R. Degagne, 2007



# Places Frequented for Recreation & Entertainment\* by the Latino Community of Del Norte, Humboldt & Mendocino Counties, CA



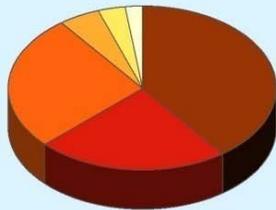
# Places Frequented for Spiritual and Religious Activities\* by the Latino Community of Del Norte, Humboldt & Mendocino Counties, CA



# How are Latinos Represented\* by Newspaper Publications in Del Norte, Mendocino & Humboldt Counties, CA



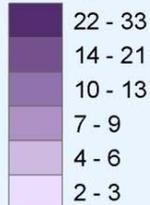
How Latinos are represented in newspaper media at a regional scale: (Sampled counties are shown in yellow.)



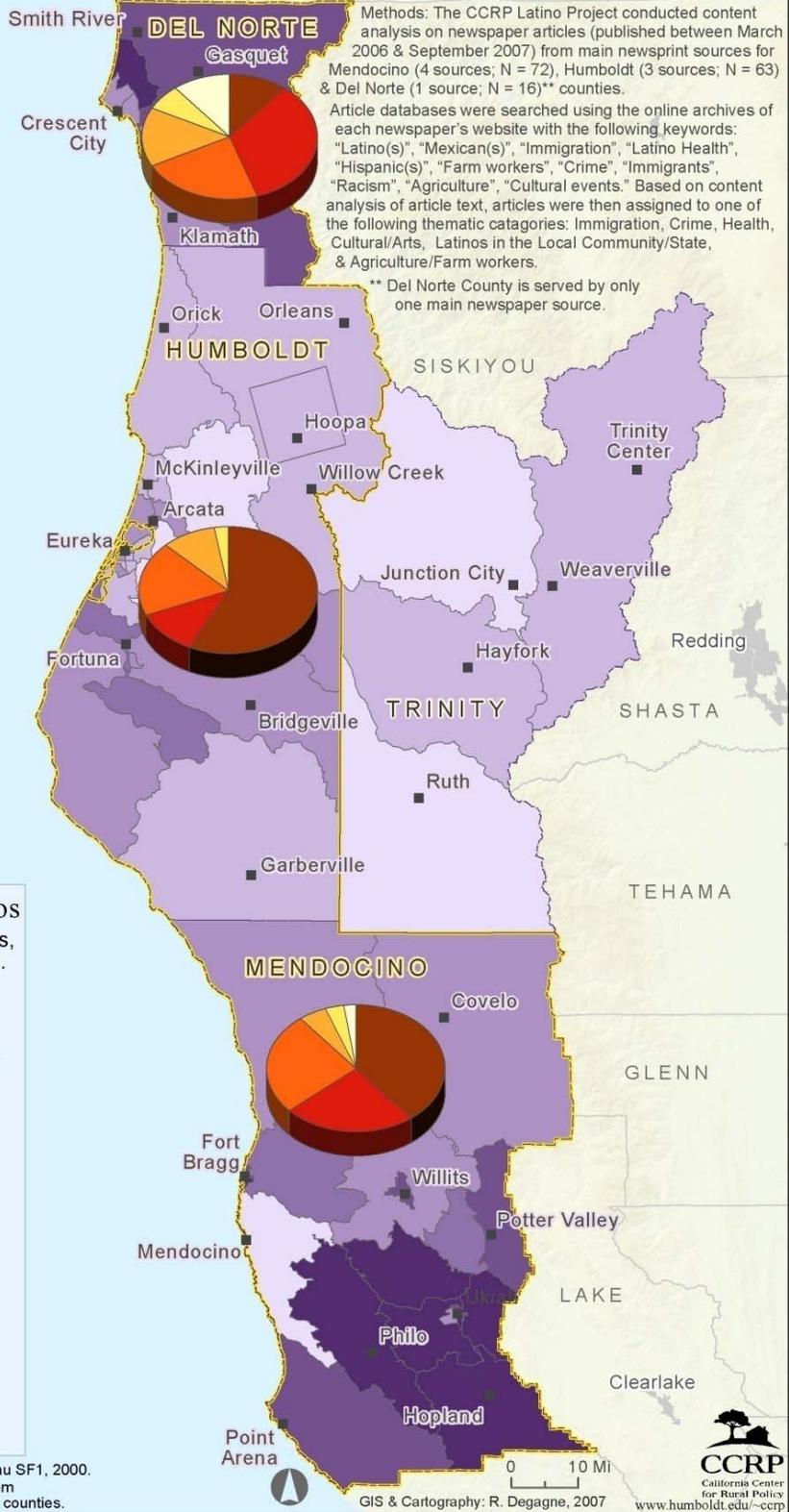
Media Themes Representing Latinos Represented as a percentage of total responses, grouped regionally (above) & by county (right).



Latino Population, 2000 Percent by Census Tract



Data Source: CCRP Latino Project, 2006-7\*; U.S. Census Bureau SF1, 2000.  
 \*Data generated from content analysis of newspaper articles from main newsprint sources for Mendocino, Humboldt, & Del Norte counties.



References and Notes:

- 1) Melnick A. *Introduction to Geographic Information Systems in Public Health*. Gaithersburg, MD: Aspen Publishers, 2002.
- 2) Lang L. *GIS for Health Organizations*. Redlands, CA: ESRI, 2002.
- 3) Steinberg SJ, Steinberg SL. *Geographic Information Systems for the Social Sciences*. Thousand Oaks, CA: Sage Publications, 2006.
- 4) The Federal Poverty Level (FPL) varies by household size. For a family of four (two adults, two children) the 2006 Federal Poverty Level (100% FPL) was \$20,444, 200% FPL was \$40,888 and 300% FPL was \$61,332