

CHAPTER V

RESEARCH RESULTS

The results of this research are presented in three sections. The first part of this chapter provides a restatement of the research questions and definitions for ICS and ICB, and presents the results of the geographical analyses in relation to research questions 1, 2, and 3. The second part reports the results of the quantitative survey designed to answer research question 4 and all its sub-topics. The last part of this chapter covers the results of the case studies that addressed issues that arose from the geographical analysis and the quantitative survey.

Research Questions

1. Are the Internet Web hosting businesses (ICBs) proximate to the actual location of the nature tourism Internet content sponsors (ICSs)?
2. What is the geography of the nature tourism sponsors (ICSs) – are they urban, urban fringe, or rural?
3. Are the nature tourism ICSs located in states that have policies/programs aimed at promoting nature tourism development and promote and facilitate the use of the Web?
4. What are the characteristics of the nature tourism businesses/organizations and how have/do they use the Web?

The nine topics addressed in this question were: (1) What are the characteristics of the nature tourism business/organization? (2) Descriptive information about the businesses/organizations' Web site. (3) What was the process of developing the Web site, from initial motivations to ultimate implementation? (4) How well is the Web site performing – is it worth their time and money? (5) What do they wish the site would do that it doesn't do now? (6) How much did/does the Web site cost in terms of start-up and maintenance? (7) Are these nature tourism ICSs attempting to depict “place” on their Web site, and if so how? (8) Do these ICSs perceive that they are part of a nature tourism community, either on the Internet or in the “real world?” (9) What are the ICSs perceptions and experience with the World Wide Web?

Restatement of Definitions for ICS and ICB

This research designated the term *Internet content business* (ICB) as those businesses that provide services to “publish” the Web sites. *Internet content sponsor* (ICS) was defined as the organization/individual providing the *impetus* for the development of a Web site. In other words, an ICS are the *actual* nature tourism business or organization. In some cases these two entities are the same.

Results of the Geographical Analyses to Answer Research Questions 1, 2, and 3

Geographical Locations of ICSs and ICBs

With the zip codes provided by the respondents to the survey, the latitude and longitude of the ICSs and ICBs' were identified using Arcview 3.2. Figures 5.1 and 5.2 illustrate the locations of the ICSs and ICBs that were identified in this research.

Table 5.1 summarizes of the geographical locations of ICSs by State. Table 5.2 summarizes of the locations of ICB by State. (see Appendix E for a complete listing ICS and their associated ICB locations). The latitude and longitude of the ICS and ICB locations were the basis for: 1) distance analysis between the ICSs and ICBs, 2) analysis of locations of the ICSs in relation to urban or rural areas, 3) analysis of ICS locations in relation to states with nature tourism programs, and 4) identifying hot spots and clusters of ICSs. The results of these analyses were used to answer research questions 1, 2, and 3.

Distance Analysis of ICSs and Their Correspondent ICBs

This analysis was conducted to answer research question 1: are the Internet Web hosting businesses (ICBs) proximate to the actual location of the nature tourism Internet content sponsors (ICSs)? The hypothesis for this question was that the ICBs and ICSs would be proximate to each other. Because most nature tourism businesses are small it was expected that they would rely on ICB services located nearby to establish an Internet presence.

Figure 5.3 is the mapped locations of the ICBs and ICSs. There are fewer ICB locations than ICS. Only forty-six ICBs were identified for the sixty-eight ICSs. Some

FIGURE 5.1 Geographical locations of ICSs representing respondents to the quantitative survey.

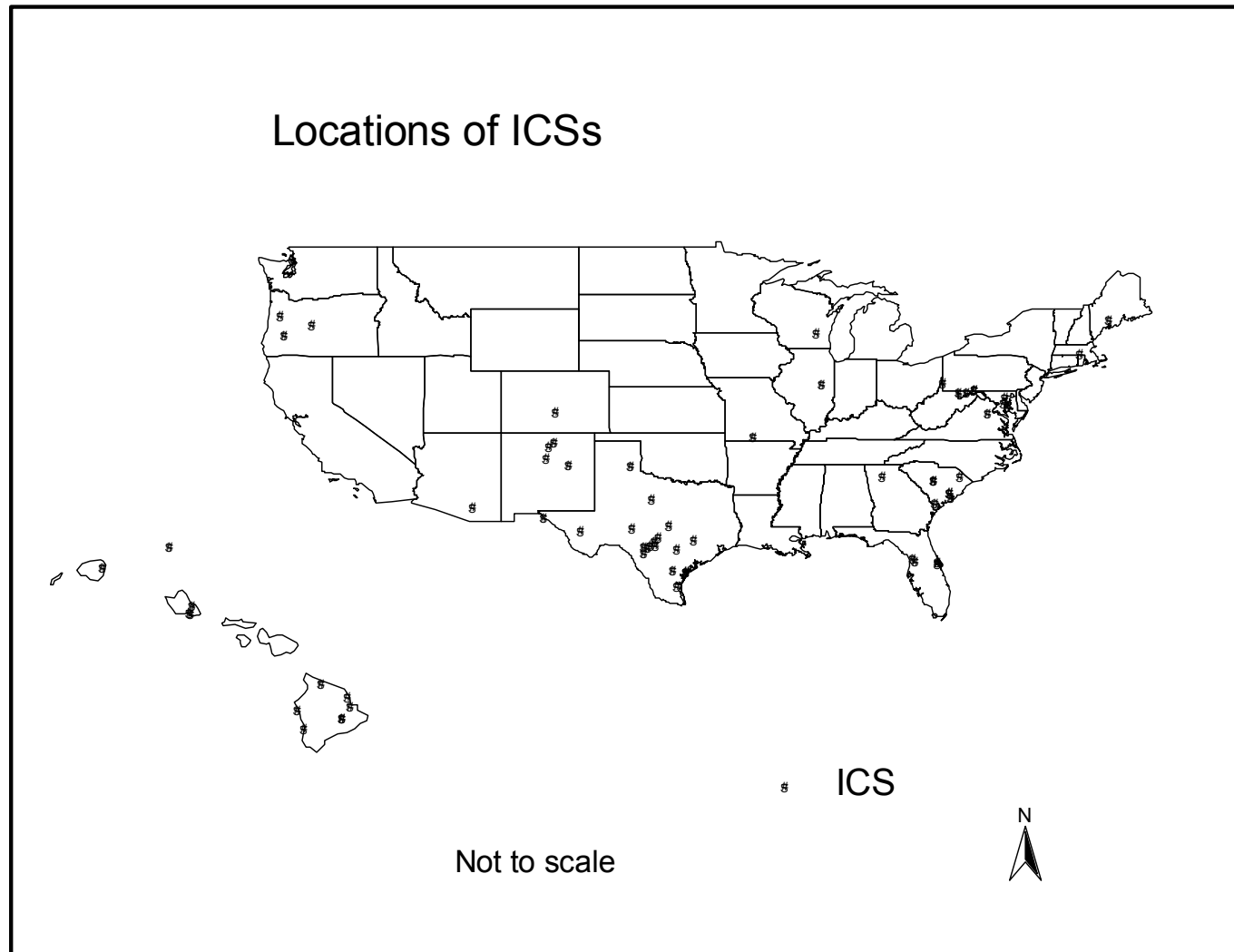


FIGURE 5.2 Geographical locations of ICBs

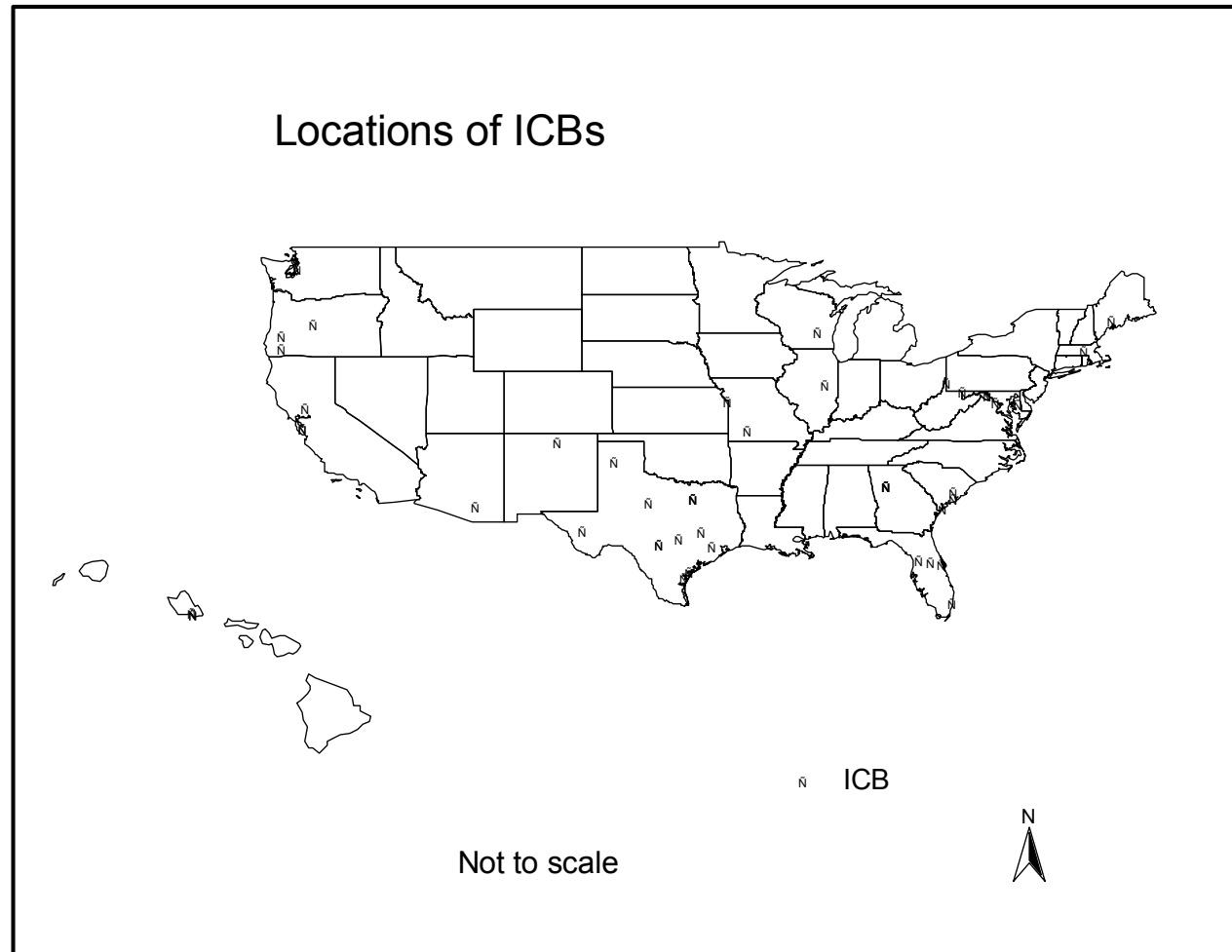


TABLE 5.1

Summary of ICS locations by state

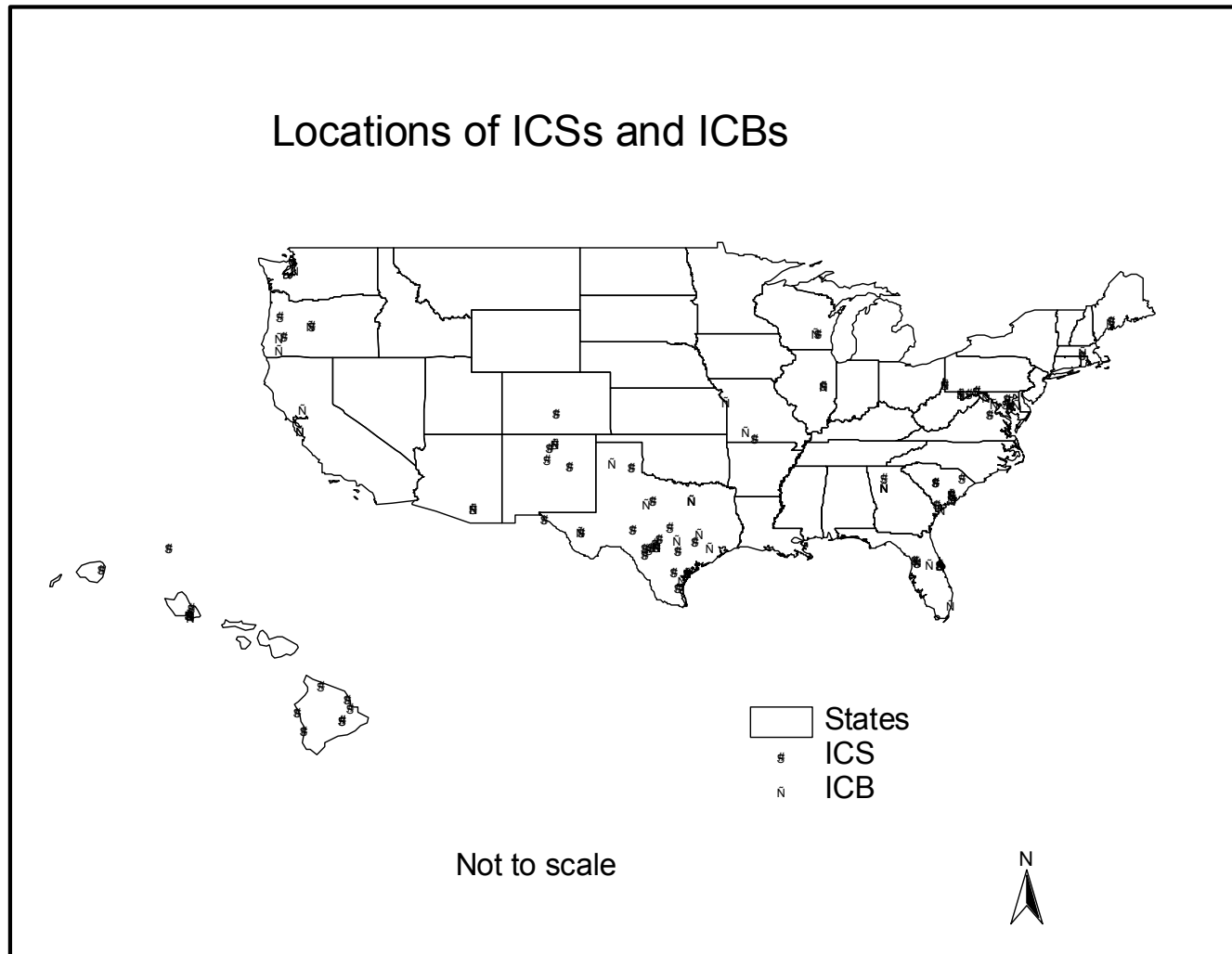
States	Number of ICS locations
Texas	20
Hawaii	12
South Carolina	7
Maryand	5
Florida	4
New Mexico	4
Oregon	3
Pennsylvania	2
Arizona	1
Colorado	1
Georgia	1
Illinois	1
Massachusetts	1
Maine	1
Missouri	1
Virginia	1
Wisconsin	1

TABLE 5.2

Summary of ICB locations by state

State	Number of ICB locations
Texas	12
Florida	4
Georgia	4
Hawaii	3
Oregon	3
South Carolina	3
California	2
Maryland	2
Missouri	2
Arizona	1
Illinois	1
Massachusetts	1
Maine	1
New Mexico	1
Pennsylvania	1
Virginia	1
Washington	1
Wisconsin	1
West Virginia	1

FIGURE 5.3 Geographical locations of ICSs and their affiliated ICB



ICSs did not provide information about their ICBs. In some cases, more than one ICS was using the same ICB. Distance analysis was conducted with CrimeStat. Table 5.3 reports the distance between individual ICSs and their associated ICBs. It is apparent that distances from ICSs and their associated ICBs varied a great deal, from 0 to 4714 miles. The distances were grouped into nine categories. Table 5.4 provides a summary of the distances between ICS and ICB.

The results from the distance analysis only moderately support the original hypothesis that ICSs and ICBs would be located near one another. Fifty-two percent of the ICSs have their Web hosting businesses within fifty miles or less of their business locations. Considering the range of distances between the ICS and ICB, fifty miles or less in relative terms can be considered nearby.

The great variation in distance between ICS and their correspondent ICBs suggests that Internet Content Sponsors (ICS) and their Web hosts (ICB) have no real geographic connection. This result invalidates Zook's (1999) assumption that ICBs and ICSs were closely related geographically. Even though there is an inclination for nature tourism businesses to look for Web hosting nearby, they are almost as likely to find services located hundreds or even thousands of miles away.

Analysis the ICSs' Locations in Relation to Urban or Rural Areas

This analysis addresses research question 2: what is the geography of the nature tourism sponsors (ICSs) – are they urban, urban fringe, or rural? This research predicted that ICSs are located in rural areas and associated with rural communities. This is

TABLE 5.3

Listing of ICS and ICB locations and distances between associated pairs.

ICS city	ICS state	ICB URL	ICB city	ICB state	Distance (miles)
Honolulu	HI	www.hypermart.net	Seattle	WA	2676
Augusta	ME	www.gwi.net	Biddeford	ME	4
Bend	OR	www.kmx.com	Bend	OR	1609
Horicon	WI	www.powerweb.net	Beaver Dam	WI	10
Idleyld Park	OR	Rosenet.net	Roseburg	OR	17
Volcano	HI	www.moriah.com	Grant's Pass	OR	2439
Uxbridge	MA	webmaster@pcgenie.com	Westboro	MA	13
Avella	PA	www.weatherburyfarm.com	Pittsburgh	PA	0
Champaign	IL	www.soltec.net	Champaign	IL	0
McHenry	MD	www.gcnet.net	McHenry	MD	0
Frostburg	MD	www.intrepid.com	Shepherdstown	WV	60
Fredericksburg	VA	www.communittech.net	Kansas City	MO	919
Honomu	HI	www.xo.com	Reston	VA	4722
Tilghman	MD	www.baylogic.com	Denton	MD	29
Cotopaxi	CO	www.adventuresports.com	Woodland	CA	879
Clearville	PA	www.promotionalproducts.com	San Jose	CA	2333
AVA	MO	pcis.net	Springfield	MO	41
Taos	NM		Taos	NM	0
Hedley	TX	www.arn.net	Amarillo	TX	71
Cayce	SC	Mindspring	Atlanta	GA	191
Cayce	SC	Mindspring	Atlanta	GA	191
Eldorado	TX	www.vianetworks.com	Atlanta	GA	960
Velarde	NM	mindspring	Atlanta	GA	1231
Moncks Corner	SC	www.santecooper.com	Moncks Corner	SC	0
Moncks Corner	SC	www.lizard.org	Charleston	sc	27
Fulton	TX	www.virtualcities.com	Dallas	TX	326
Rockport	TX	virtualcities.com	Dallas	TX	328
Lampasas	TX	www.bestinns.net	Dallas	TX	143
Albany	TX	www.bitstreet.com	Abilene	TX	30
Tucson	AZ	www.theriver.com	Tucson	AZ	0
Ridgeland	SC		HHI	SC	26
Fort Davis	TX	www.texascamping.com/	Fort Davis	TX	0
Charleston	SC	NetForward.com	College City	TX	969
Belmont	TX	www.io.com	Austin	TX	50
Bandera	TX	www.indian-creek.net	Bandera	TX	0
Medina	TX	www.indian-creek.net	Bandera	TX	19
Burton	TX	www.roundtopcottages.com			65
Floral City	FL	www.naturecoastcentral.com	Inverness	FL	8
Waianae	HI	charternet.com	Sanford	FL	4714
Titusville	FL	www.nbbd.com	Titusville	FL	0

TABLE 5.3—*Continued*

ICS city	ICS state	ICB URL	ICB city	ICB state	Distance (miles)
Rockport	TX	www.cybernet-ics.com/birders	Rockport	TX	2
Sarita	TX	www.2-houghs.com	Corpus Christi	TX	41
Uvalde	TX	TIMEHOST.NET	Hollywood	FL	1220
Honolulu	HI	www.aloha.net	Honolulu	HI	2
Kapaa	HI	www.flex.com	Honolulu	HI	110
Hilo	HI	www.cyberhawaii.com	Honolulu	HI	208

TABLE 5.4

Summary of distances between ICSs and their affiliated ICBs

Range of distances (in miles)	Number of occurrences
Less than 1	9
1 to 10	5
11 to 50	10
51 to 250	7
251 to 500	3
501 to 1000	4
1001 to 2000	3
2001 to 3000	3
Greater than 3000	2

because cities do not normally have the extent of natural resource attractions necessary to be considered “nature tourism.”

Determining the geographical relationships of these nature tourism businesses to urban areas depends on the definitions of urban, urban fringe and rural. The U.S. Census Bureau (n.d.) defines these terms as follows.

The Census Bureau delineates urbanized areas (UA's) to provide a better separation of urban and rural territory, population, and housing in the vicinity of large places. A UA comprises one or more places ("central place") and the adjacent densely settled surrounding territory ("urban fringe") that together have a minimum of 50,000 persons. The urban fringe generally consists of contiguous territory having a density of at least 1,000 persons per square mile. The urban fringe also includes outlying territory of such density if it was connected to the core of the contiguous area by road and is within 1 ½ road miles of that core, or within 5 road miles of the core but separated by water or other undevelopable territory.

Table 5.5 summarizes the number of ICS that fall in each category and their respective percentages. Each ICS was designated as urban, urban fringe or rural according to the definition of the US Census Bureau.

Table 5.5 shows that only five (7.5 percent) of the research participants are located anywhere near an urban area (See Appendix F for complete table listing ICS locations relative to urban areas). This result strongly supports the hypothesis that nature tourism businesses are located in rural areas.

Analysis of ICSs Locations in Relation to States with Nature Tourism Programs

This analysis was conducted to answer research question 3: are the nature tourism ICSs located in states that have policies/programs aimed at promoting nature tourism development and promoting and facilitating the use of the Web? This question addresses

TABLE 5.5

Summary of the geography of nature tourism ICS

Place Designation	# of nature tourism ICS	Percent
Urban	4	5.9%
Urban fringe	1	1.6%
Rural	62	92.5%

whether or not public policies or programs have provided a catalyst for the development of nature tourism businesses and their use of the Web. The hypothesis was that nature tourism attractions investigated in this research would most often be located in states that have programs promoting or supporting nature tourism development and the use of the Web. Therefore, states with nature tourism policies/programs would have more nature tourism Web sites (and thus actual businesses) than other areas.

Reviewing the Web sites for the fifty states' park systems and tourism agencies revealed that five states had resources supporting nature tourism/ecotourism, or agritourism (see Appendix G for a complete listing of the URLs for the fifty states' park systems and tourism agencies Web sites). These states are Hawaii, Maine, Maryland, South Carolina, and Texas. Other states that had less prominent nature tourism/ecotourism or agritourism resources are Florida, Georgia, Michigan, and Montana (Table 5.6).

The locations of ICSs were overlaid with the states identified as having nature tourism/ecotourism or agritourism programs and the other states that had some evidence of having nature tourism/ecotourism or agritourism programs (Figure 5.4). Sixty-four percent (43 of 67) of the ICSs are located within the five states that have extensive state supported nature tourism development programs. An additional 7 percent are located in states that have less prominent nature tourism/ecotourism or agritourism programs. In total, 72 percent of the ICSs that participated in this research were located in states that were found to have some nature tourism/ecotourism or agritourism programs identified on their Web sites.

TABLE 5.6

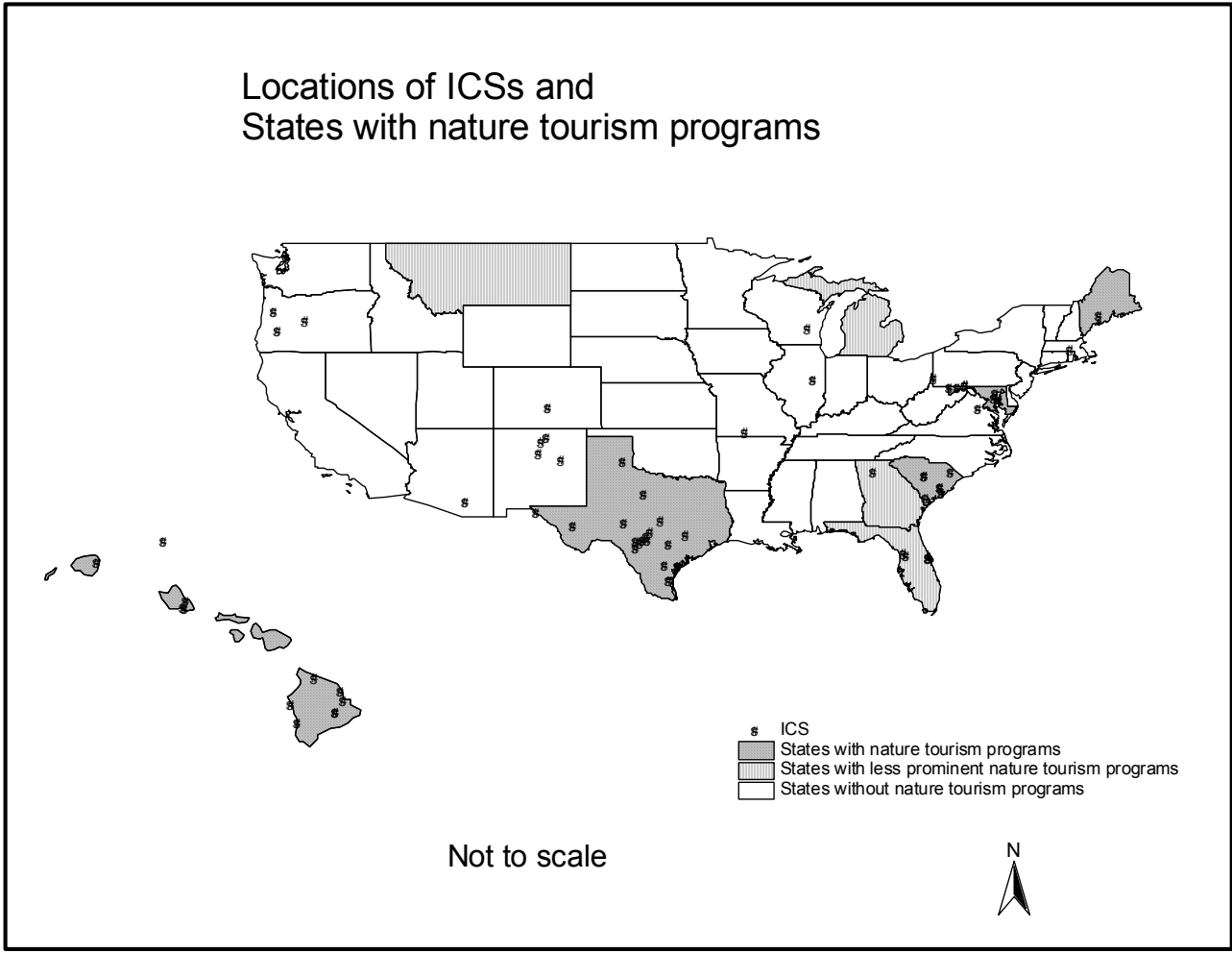
Summary of findings for Web searches for states with nature tourism programs.

States with prominent nature tourism programs	Summary of Web site searches
Hawaii	State parks Web site: no references to nature tourism/ecotourism Tourism Web site: Nature tourism search went to University of Hawaii, Sea Grant Extension Service Web site for the Hawaii Ecotourism Association
Maine	State parks Web site: no references to nature tourism/ecotourism Tourism Web site: Link from main page to Nature-Based Tourism in Maine
Maryland	State parks Web site: Web site dedicated to nature tourism. Site had 345 references to nature tourism Tourism Web site: no nature tourism/ecotourism
South Carolina	State parks Web site: link to Nature Based Tourism Association Tourism Web site: link from main page to heritage and nature tourism
Texas	State parks Web site: search for nature tourism revealed 195 references including programs, services and support, etc. Tourism Web site: search entire Web site using "nature" located 720 attractions.
States with less prominent nature tourism programs	
Florida	State parks Web site: providing local development funds for ecotourism, obscure reference Tourism Web site: no references for nature tourism. Ecotourism revealed 8 matches for places to go.
Georgia	State parks Web site: no reference to nature tourism Tourism Web site: nature tourism revealed 270 references to small destinations nature trails, outfitters, parks, etc. No apparent larger program.

Table 5.6—*Continued*

Michigan	<p>State parks Web site: no reference to nature tourism.</p> <p>Tourism Web site: from the site map there was a reference to agricultural tourism/Cultural Tourism/Nature. Provided listings of places to go attractions primarily state parks.</p>
Montana	<p>State parks Web site: no reference to nature tourism.</p> <p>Tourism Web site: Extensive listing of tour operators from site map for Adventure tour-tour operators.</p>

FIGURE 5.4. Geographical locations of ICSs and states with nature tourism programs.



Hot spot analysis

Using the latitude and longitude information for all the ICSs, hot spot analysis was conducted to further examine the spatial distribution characteristics of ICSs and their relationship with states that have nature tourism programs. The methods used for the hot spot analysis are nearest neighbor and K-means cluster. Both of these spatial analysis techniques are useful to identify spatial concentrations of point incidents. Figure 5.5 is the Arcview mapped results of the nearest neighbor clustering analysis with a minimum number of ICSs incidents of three per cluster. The program identified seven hot spots.

Figure 5.6 shows that five of the seven the hot spots are located in the states that have nature tourism programs. These states are Hawaii, Texas, South Carolina, and Maryland. One hot spot appears in the state of Florida that had a less prominent nature tourism program. Figure 5.7 presents the results of a K-means cluster analysis. The result of the K-means cluster analysis shows a similar pattern as nearest neighbor analysis, only the ellipses cover larger geographical areas. It identified five clusters of ICSs. The states that were identified previously as having nature tourism programs are also covered by the K-mean cluster ellipses (Figure 5.8). Even though this research is only concerned with nature tourism businesses using the Internet around the nation, the results of this analysis strongly suggest that states' or regional efforts to support nature tourism businesses have stimulated nature tourism business development.

Because these analyses were conducted prior to the case study portion of this research, these results provided useful information for further investigation in the

FIGURE 5.5 Results of nearest neighbor cluster analysis of ICS (n = 3).

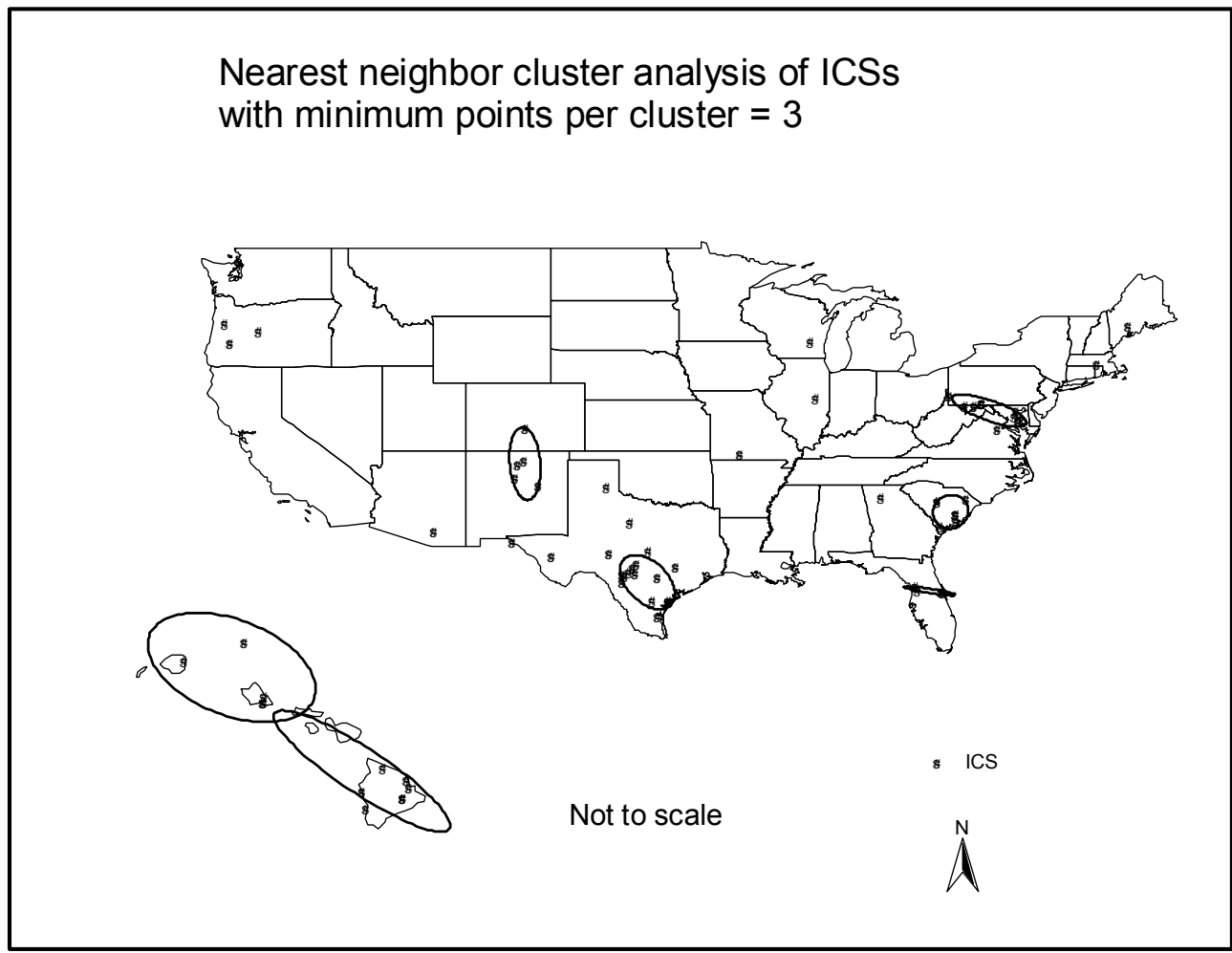


FIGURE 5.6 Overlay of nearest neighbor clusters and states with nature tourism programs.

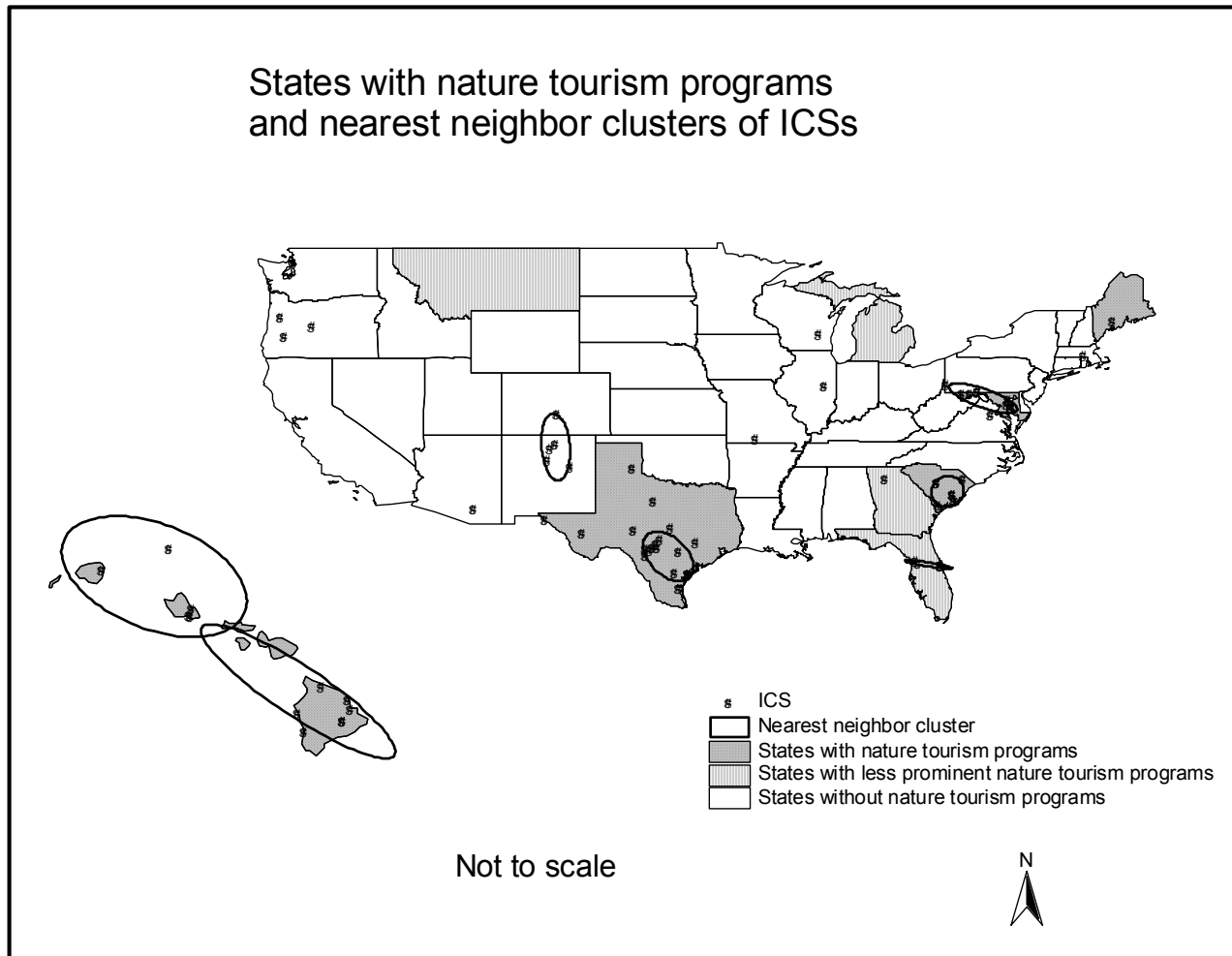


FIGURE 5.7 Results of K-means cluster analysis of ICSs (K = 5).

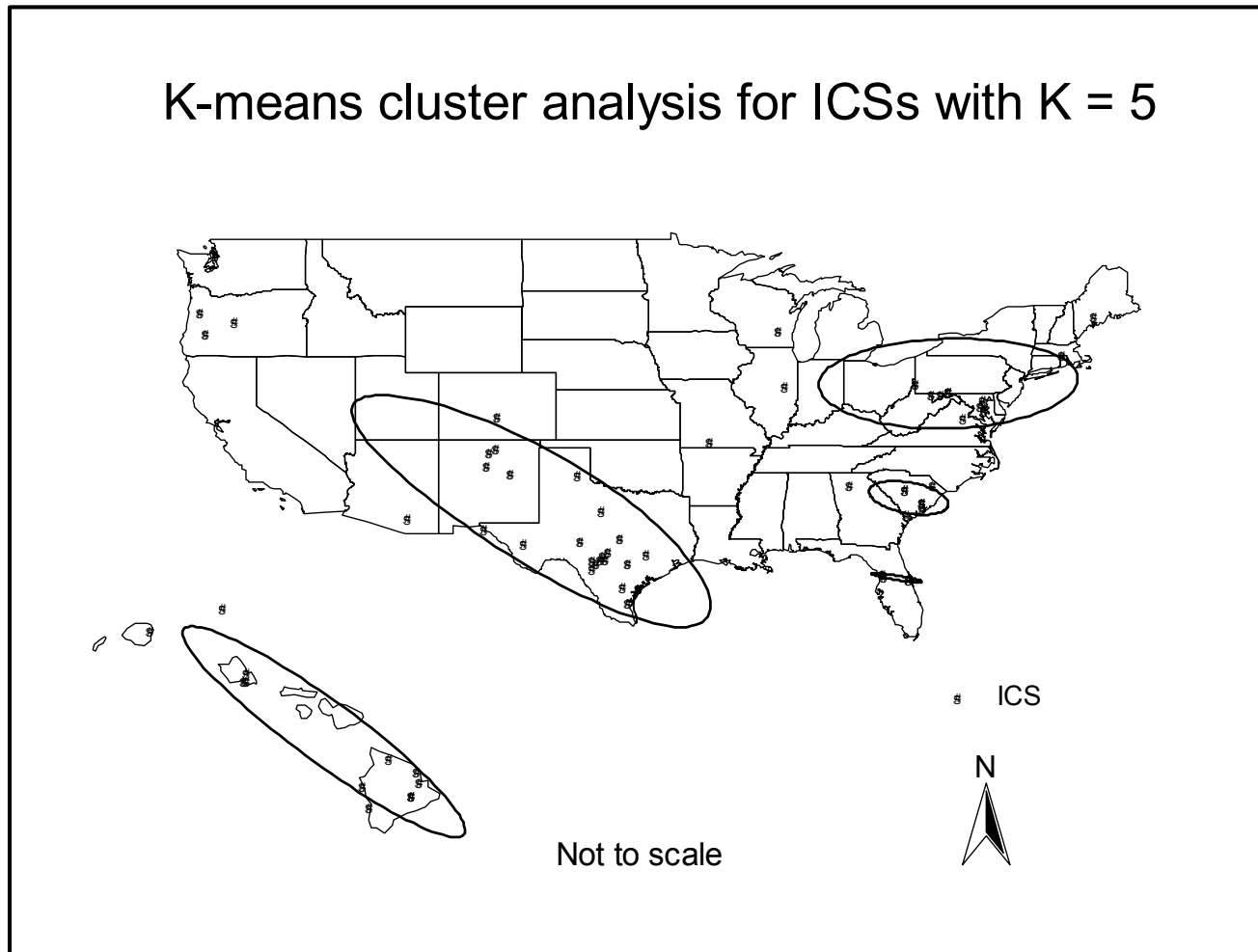
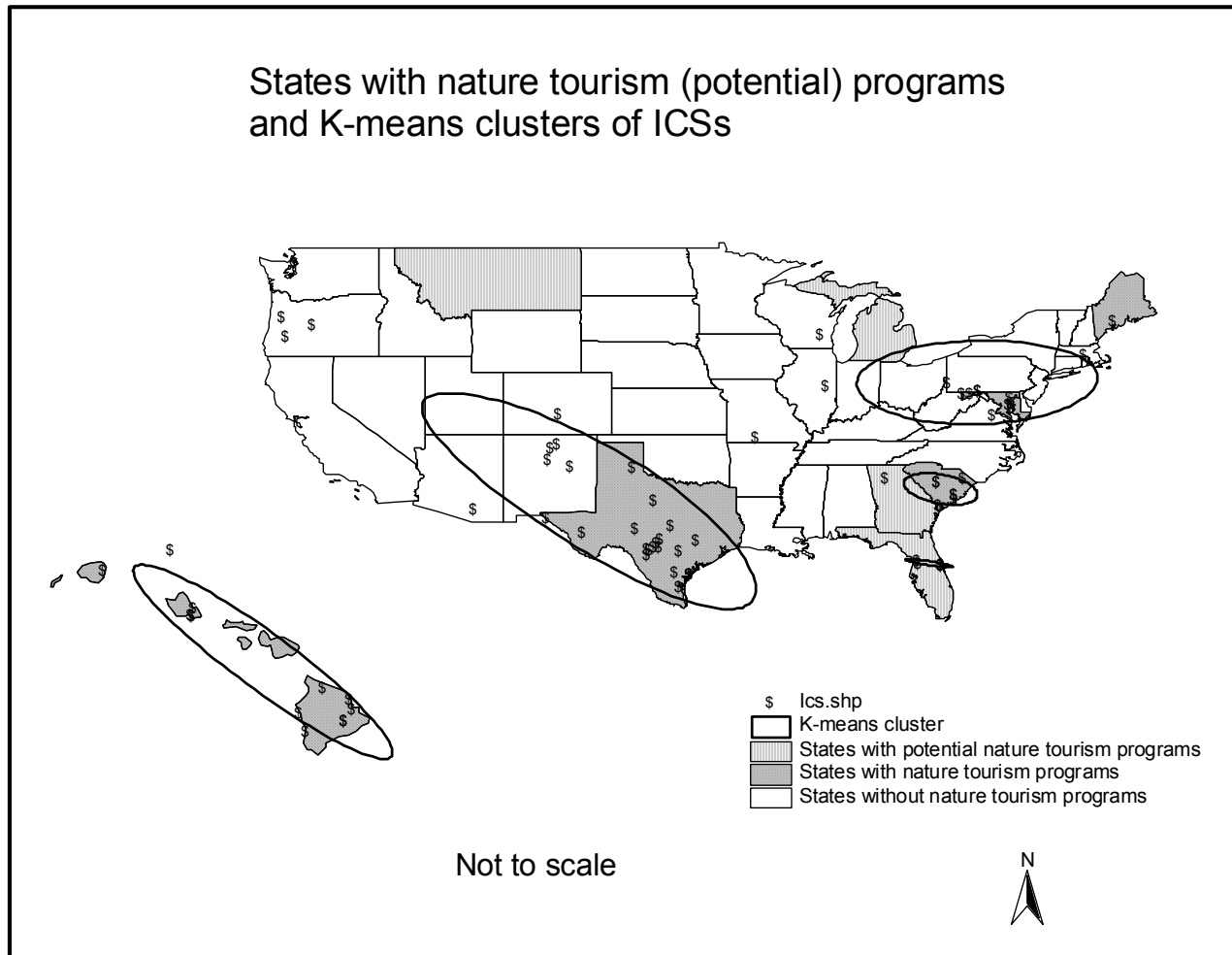


FIGURE 5.8 Overlay of K-means cluster and states with nature tourism programs



telephone interviews. The cases selected for the qualitative portion of this research were chosen to represent the areas highlighted in these maps.