

**Investigations on the Distributions of Freshwater Mussels  
In the Missouri River Reservoirs of South Dakota**

**Final Report**

**Presented to the  
South Dakota Department of Game, Fish and Parks  
523 East Capitol  
Pierre, South Dakota 57501**

**In Partial Fulfillment  
Of the Consulting Agreement  
Issued in Conjunction with  
The Small Grants Program**

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### Executive Summary

Investigations were conducted at twenty-seven locales in the South Dakota portion of Lake Oahe during the first two weeks of April, 2003. Twenty-two of the sites representing 81% of the total sites collected produced evidence of recent populations of unionid mollusks. Seven species were collected from Lake Oahe. Five species: *Lampsilis siliquoidea*, *Lasmigona c. complanata*, *Leptodea fragilis*, *Potamilus ohioensis*, and *Pyganodon grandis* were present at more than one site. *Ligumia subrostrata* and *Potamilus alatus* were represented in survey collections by a single specimen each.

Mussels were most commonly collected from sheltered coves along the lake shoreline. Unionids were also found to inhabit portions of the reservoir bottom adjacent and shoreward from raised underwater ridges that were oriented parallel to the shore of the reservoir. Mussels were generally not present in areas directly exposed to the waves emanating from the main portion of the reservoir.

Voucher specimens documenting this survey have been or will be deposited in the collections of a number of research museums around the country. Most of the specimens will be donated to the Museum of Biological Diversity at Ohio State University in Columbus, Ohio.

## Introduction

The freshwater mussels of the Missouri River as a whole have been relatively unstudied (Hoke, 1983). The reaches of the Missouri River within eastern Montana and North and South Dakota have been almost entirely ignored. In fact, there are only two publications relating to freshwater mussels of the Missouri River in this region. The only published nineteenth century record is the collection of *Lasmigona c. complanata* at Fort Clark in northwestern North Dakota (Hayden, 1862). Recently, Backlund (2000) reported the collection of *L. c. complanata*, *Leptodea fragilis*, *Potamilus ohiensis*, and *Pyganodon grandis* from Lake Sharpe. The absence of nineteenth century collection activity in the region is especially unfortunate since most of these reaches are now beneath the waters of five large reservoirs. From southeast to northwest these are: Lake Francis Case, Lake Sharp, Lake Oahe, Lake Sakakawea, and Fort Peck Lake.

Drought conditions in the upper and middle Missouri River basin over the past few years have resulted in some of the lowest water levels in years at some of these reservoirs, and presented a rare opportunity to survey mussels with relatively little effort. Accordingly a small grant was requested and granted to study the mussels in the Missouri River reservoirs in South Dakota.

As initially envisioned, the project was to survey a small number of sites in three reservoirs: Lake Francis Case, Lake Sharp and Lake Oahe. Prior to the beginning of the project, however, the water in the two former reservoirs was raised to normal levels and during February 2003, the water in Lake Oahe rose almost five feet. The rise in water levels at Lake Francis Case and Lake Sharp precluded survey activity without the use of scuba, however, water levels at Lake Oahe remained historically low despite the February rise and the decision was made to concentrate all survey activity in this reservoir.

## Goals and Methods

The primary goal of the investigation was to identify the mussels present in Lake Oahe and to gain some understanding of the habitats utilized. A second goal was to document this work by depositing vouchers at active research museums in the country so that permanent historical records supporting the work would be available to other biologists.

The collection method employed in the fieldwork was to take advantage of the low water conditions and to walk along the exposed shorelines of the lake with the goal of collecting the mussels stranded by the receding waters. The amount of time spent at any site varied from one-half to three hours dependent upon collecting conditions existing at the site. Since identifications of mussels can be obtained from their shells, no live specimens were collected. The specific localities investigated were limited to those points along the shoreline with public access. Since the eastern shore of the lake has many public access points, most survey activities were confined to that area.

The taxonomy employed in this paper is that recognized by the American Fisheries Society (Turgeon et al. 1998).

## Results and Discussion

Twenty-seven sites were physically investigated in the South Dakota portion of Lake Oahe between April 1 and April 14, 2003 (Figure 1). Four additional locales were visited but not collected due to adverse conditions at those sites. Twenty-two locales or 81 percent of the total sites collected yielded either identifiable unionids (21 sites) or unidentifiable unionid shell fragments only (1 site).

Two hundred and ninety-four specimens were recovered during the survey (Appendix 1). These included 252 complete specimens, and 42 single valves. Since only the best specimens were retained for possible donation to museums, the total number of specimens seen during this survey was actually several times the number retained.

Seven species of unionid mollusks were collected from Lake Oahe: *Lampsilis siliquoidea*, *Lasmigona c. complanata*, *Leptodea fragilis*, *Ligumia subrostrata*, *Potamilus alatus*, *Potamilus ohiensis*, and *Pyganodon grandis* (see Appendix 2 for complete names). *Lampsilis siliquoidea*, *P. ohiensis* and *P. grandis* were the most common species and the most widespread as well. *Leptodea fragilis* was also fairly common, but *L. c. complanata* was present only at four locales and only six paired and one unpaired valve were seen. *Ligumia subrostrata* and *P. alatus* were rare with only one individual of each species recovered during the survey. The distributions of the species recovered are shown in Figures 2-8.

The unionid diversity of Lake Oahe appears to be currently extant. Most of the valves seen during the survey were fairly recent and comparatively un-weathered. Six species were collected as fresh or recent valves at one or more sites. *Potamilus alatus* was the only species represented solely by shells in moderately weathered condition.

All the species collected in this study are first reported from the South Dakota portion of Lake Oahe in this paper. The records for the *Lasmigona c. complanata*, *Leptodea fragilis*, *Ligumia subrostrata*, *Potamilus alatus*, and *P. ohiensis* represent the most northwesterly records thus far reported for these species in South Dakota. *Lampsilis siliquoidea* and *Pyganodon grandis* have been reported in extreme northwestern South Dakota previously by Over (1915) for the North Fork of the Grand River in Perkins County and the Little Missouri River in Harding County respectively.

Bivalves were most frequently collected from soft mud or mud and sand substrates along gently inclined surfaces in sheltered areas. They were uncommon and usually absent from steeply sloping substrates, and appeared to be absent entirely from reaches exposed to the full force of wind generated waves. These later reaches would also be the most likely points at which drifting cakes of ice would impact shorelines during the break up of ice in the late winter. Mussels were primarily obtained from two

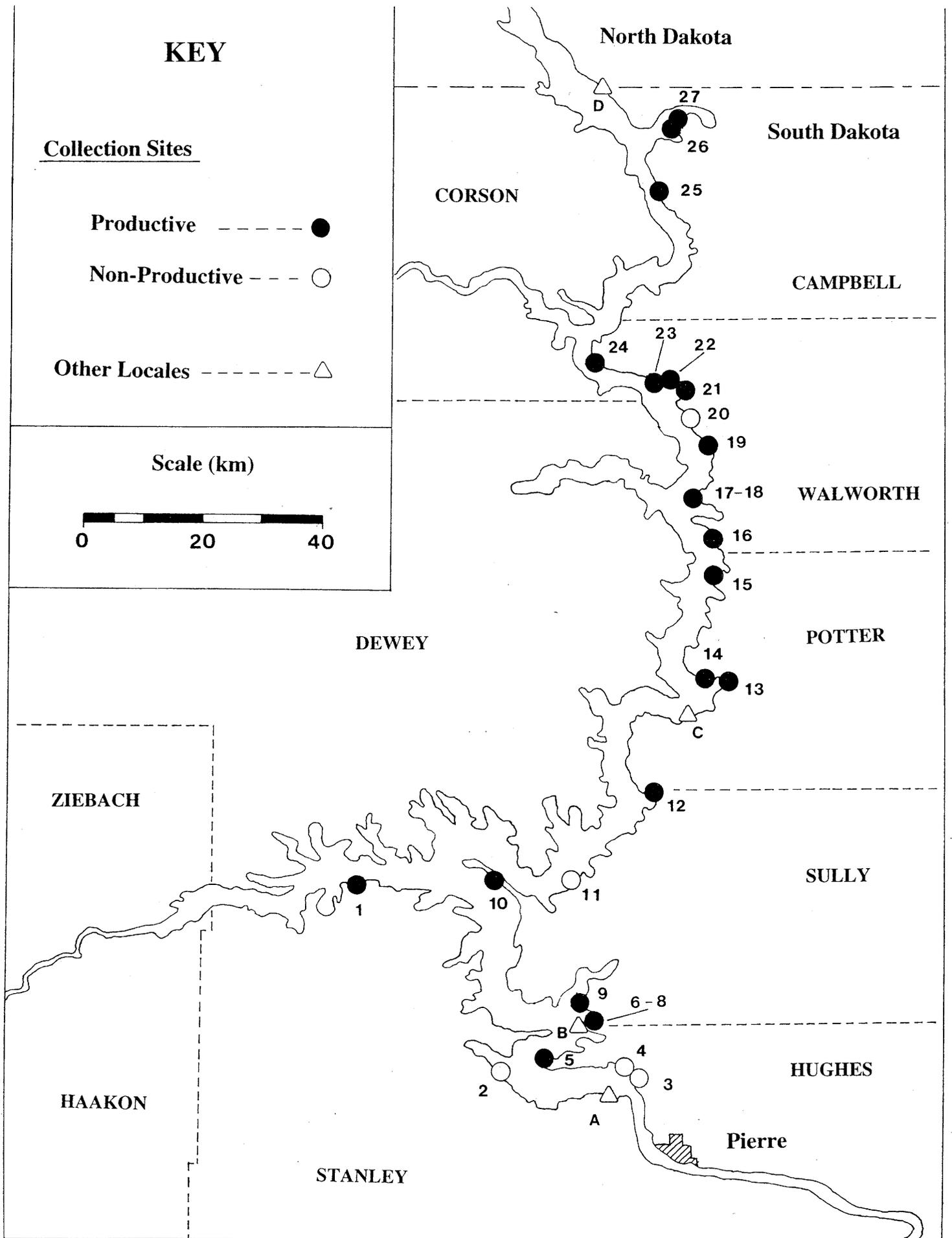


Figure 1

**SURVEY INVESTIGATIONS IN LAKE OAHÉ**

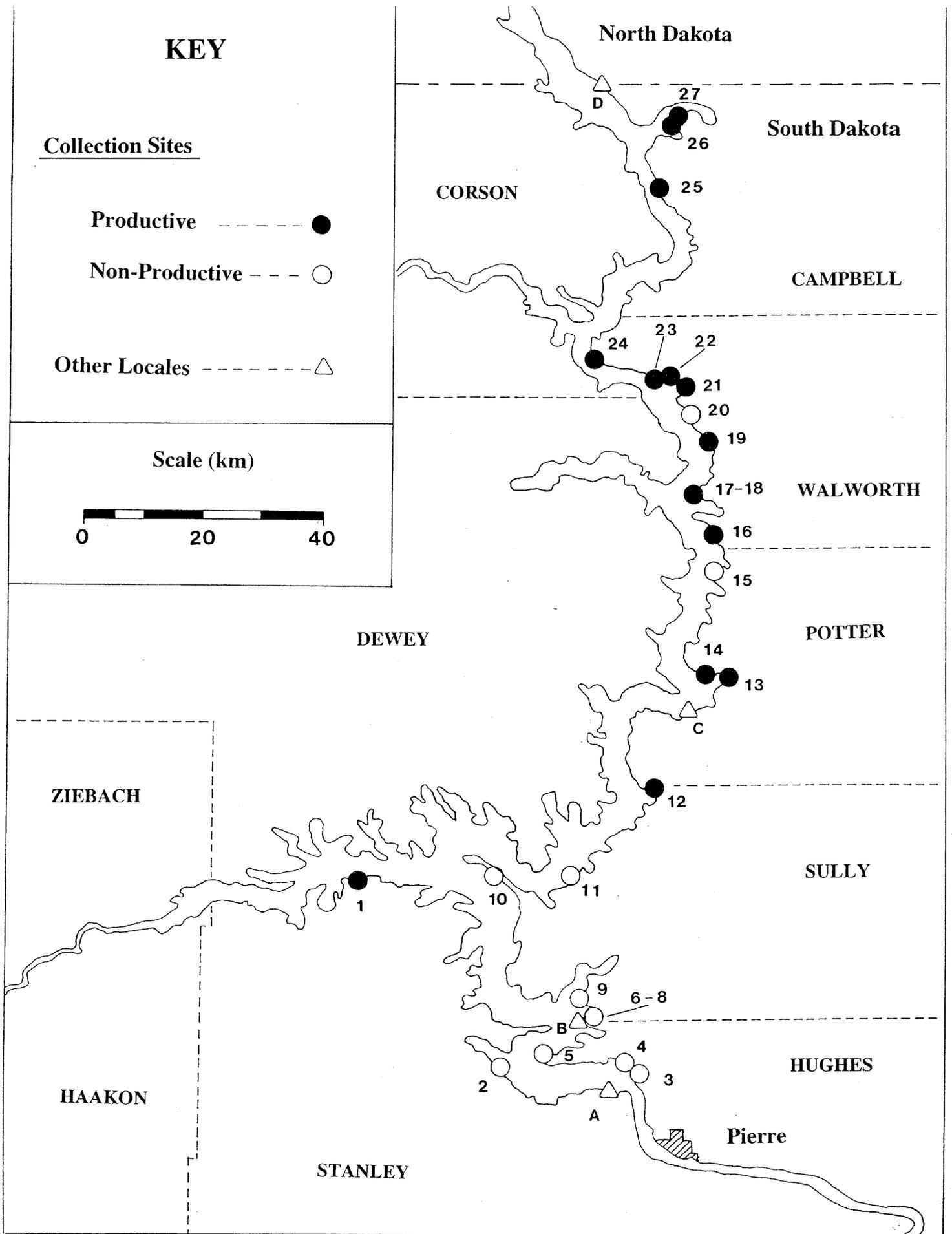


Figure 2

*Lamprolaima siliquoidea* (Barnes, 1823)

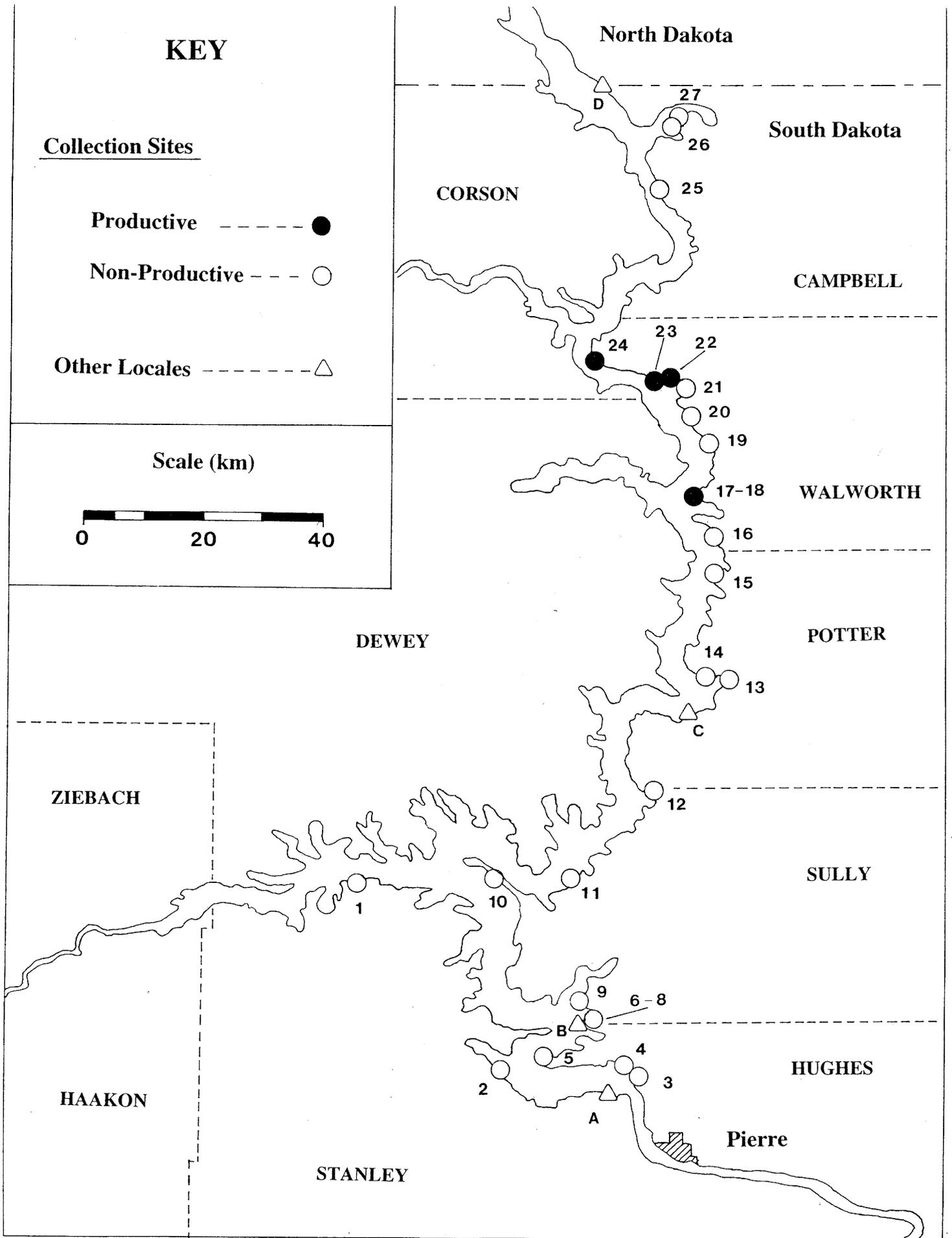


Figure 3

*Lasmigona complanata complanata* (Barnes, 1823)

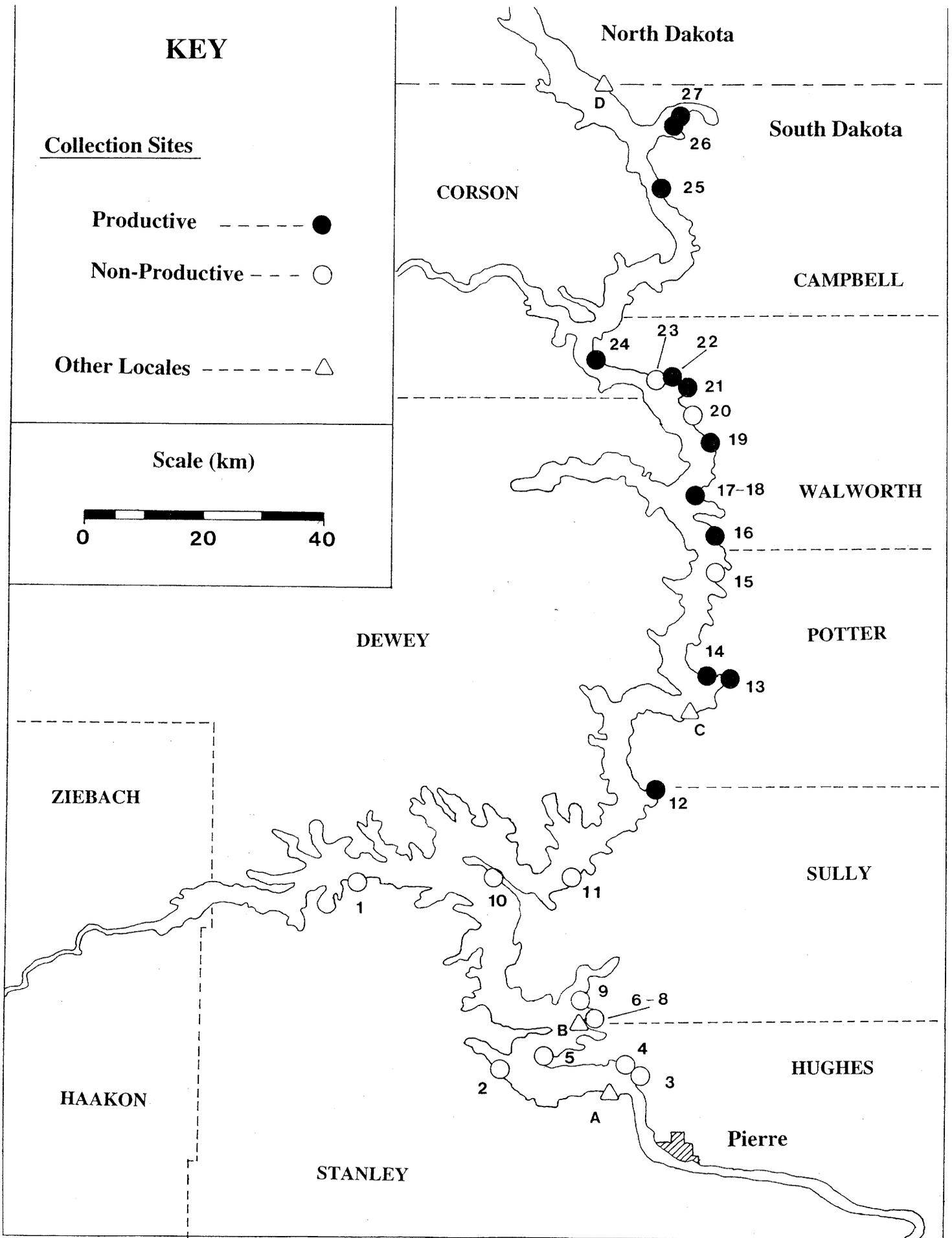


Figure 4

*Leptodea fragilis* (Rafinesque, 1820)

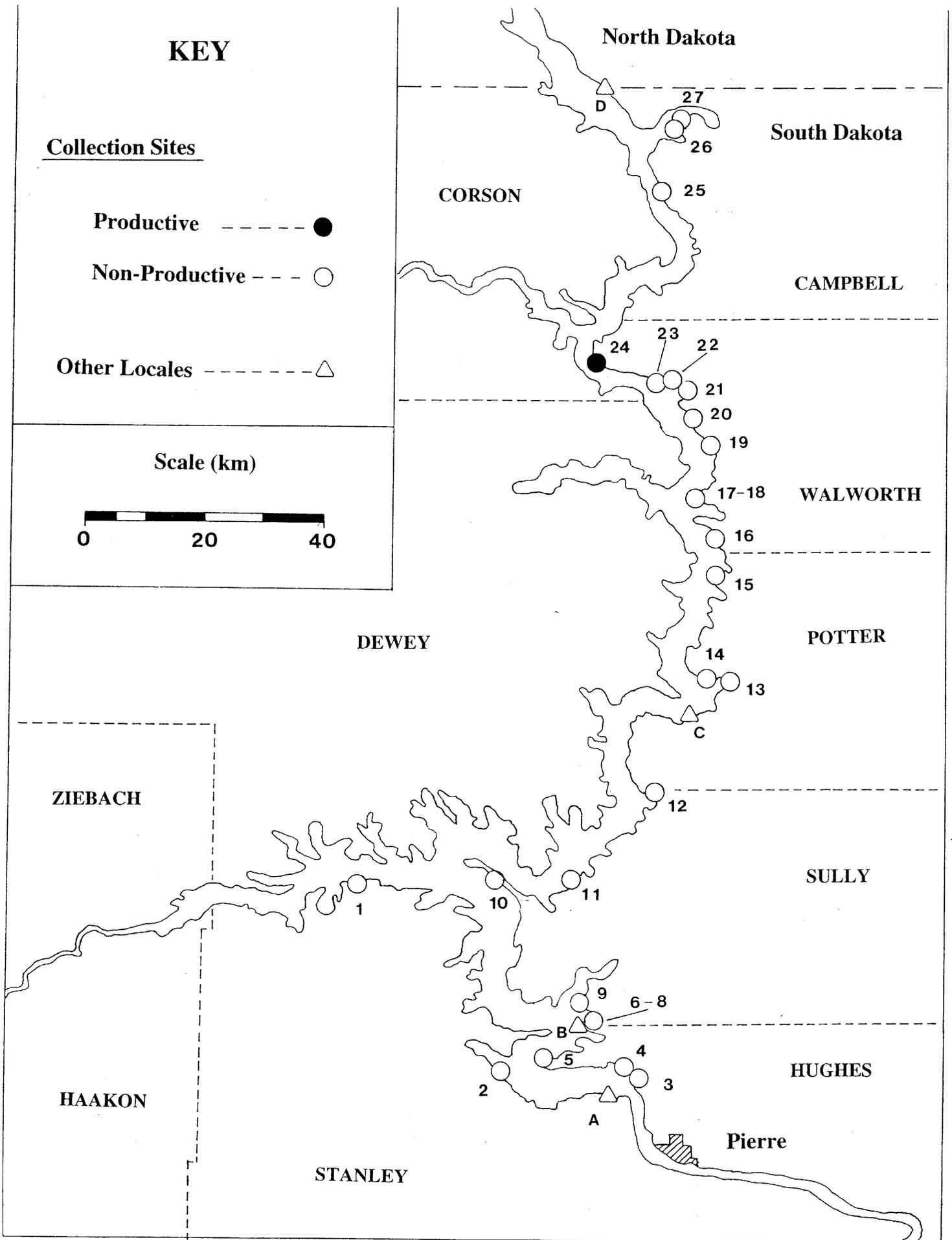


Figure 5

*Ligumia subrostrata* (Say, 1831)

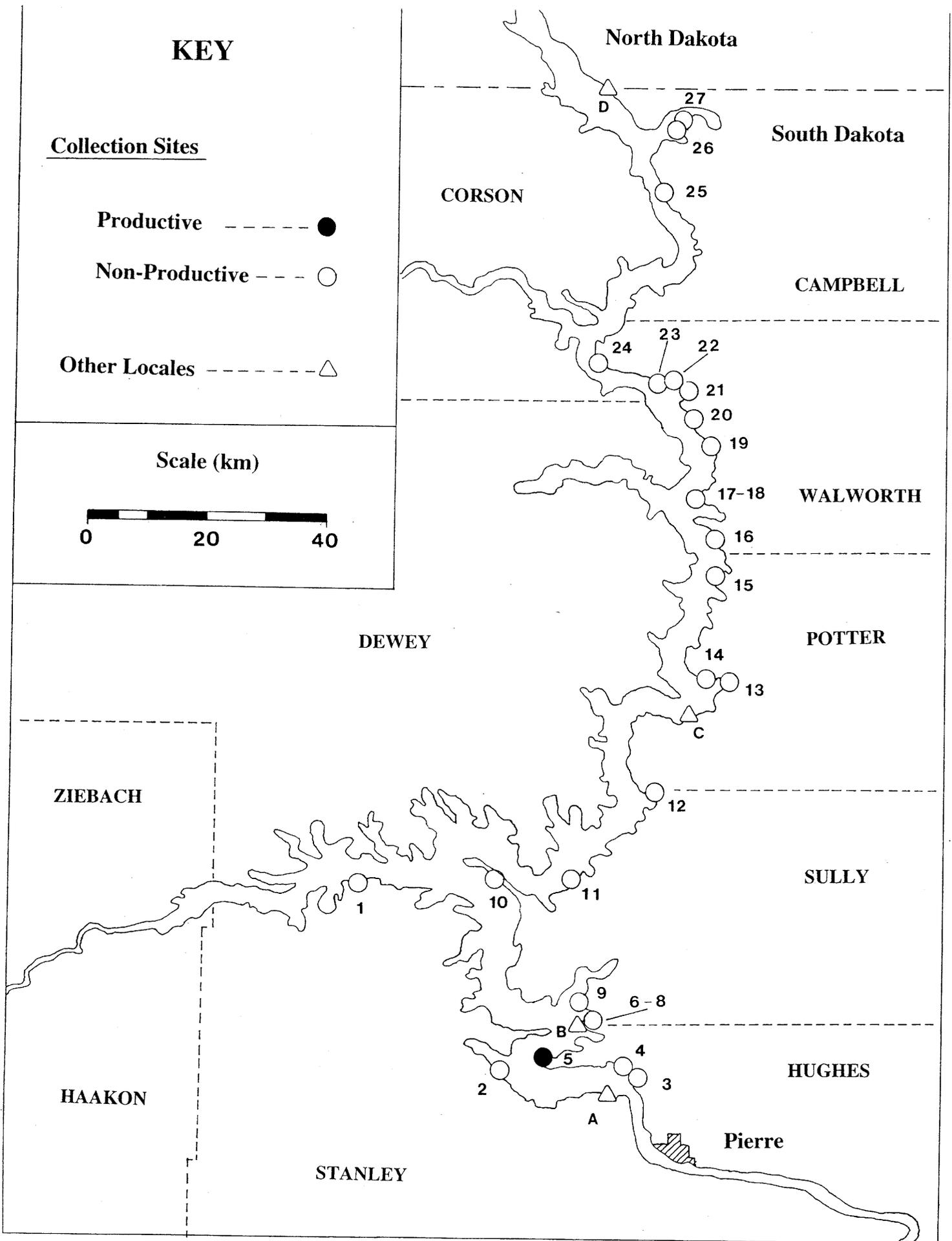


Figure 6

*Potamilus alatus* (Say, 1817)

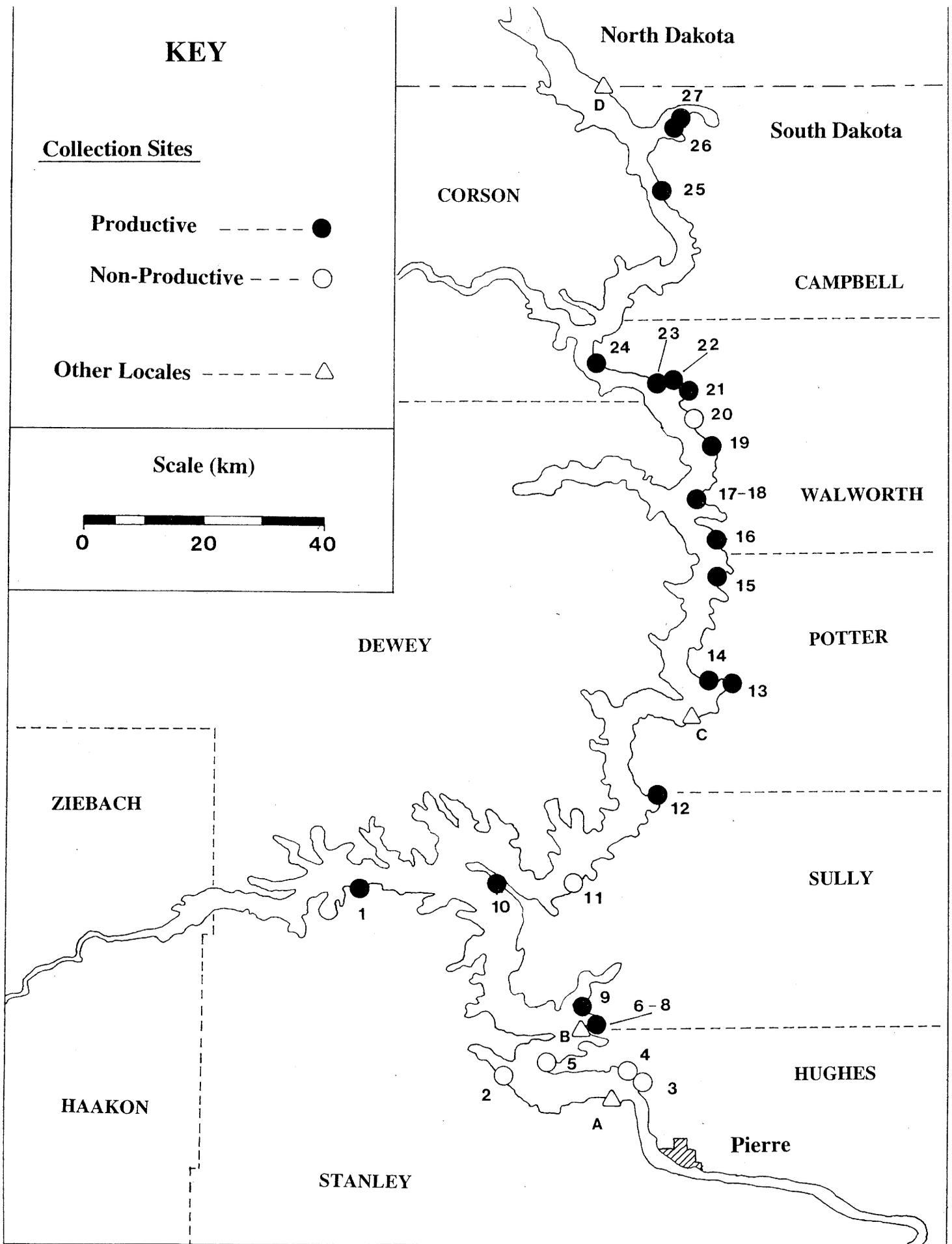


Figure 7

*Potamilus ohiensis* (Rafinesque, 1820)

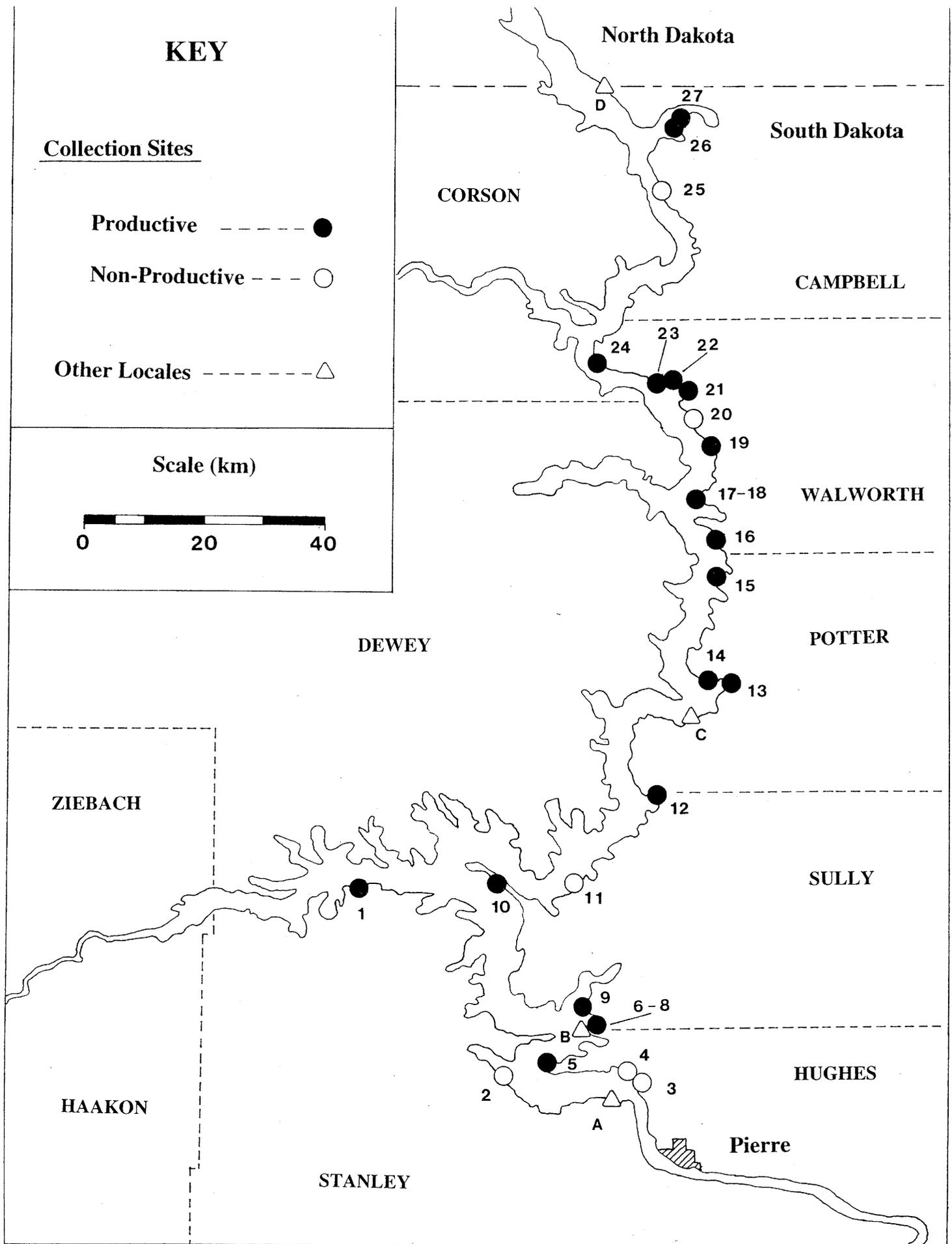


Figure 8

*Pyganodon grandis* (Say, 1829)

habitats: (1) deep sheltered coves along the margin of the reservoir, and (2) reaches of the reservoir bottom that were partially sheltered by elongated and elevated sections of the bottom oriented parallel to the shore and possibly providing some shelter from large wind driven waves.

Unionid populations do not appear to be evenly spread throughout the reservoir. Populations near the dam above Pierre, South Dakota appear to be relatively sparse. In contrast, some large populations were located at sites along the reaches north of the US 212 bridge. This population disparity may reflect the availability of suitable habitat in the two regions. Near the dam there were few areas with long gently sloping bottoms, but above the US 212 bridge a number of these sites were encountered. A second possibility is that bivalve populations in the lower reach of the reservoir may have been concentrated at greater depths than is true of the upper reaches of the lake, and thus may not have been located in the dewatered areas collected in this survey.

The unionids collected will be donated to major research museums in the country. Most of the specimens will be deposited at the Museum of Biological Diversity at Ohio State University, Columbus, Ohio. In addition, some specimens from this survey will be deposited in the collections of the following institutions: Academy of Natural Sciences, Philadelphia, Pennsylvania; Illinois Biological Survey, Champaign, Illinois; Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts; National Museum of Natural History, Smithsonian Institution, Washington, D.C.; and the Museum of Zoology at the University of Michigan, Ann Arbor, Michigan. A small number of specimens were either retained by the writer or donated to Dr. David H. Stansbery. See Appendix 3 for a detailed disposition of all the specimens collected during this study.

### Conclusion

Based upon the results of this investigation it appears that Lake Oahe currently provides significant habitat for *Lampsilis siliquoidea*, *Leptodea fragilis*, *Potamilus ohioensis*, and *Pyganodon grandis*. The lake also provides some habitat for *Lasmigona c. complanata*, *Ligumia subrostrata* and *Potamilus alatus*.

### Acknowledgements

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**APPENDIX 1**  
**LOCALITIES COLLECTED and RESULTS**

| <u>Name of Locality Collected</u> | <u>Specimens Collected</u> |
|-----------------------------------|----------------------------|
|-----------------------------------|----------------------------|

**1. Minneconjou Lakeside Use Area**

Site comprises large bay west of boat ramp. A few mussels found on the extreme south and west shores of this site. Most specimens are only a few years old. Possible more specimens lie in deeper water at this site.

Unionids Collected:

|                              |         |
|------------------------------|---------|
| <i>Lampsilis siliquoidea</i> | 1       |
| <i>Potamilus ohioensis</i>   | 4 + 1/2 |
| <i>Pyganodon grandis</i>     | 1/2     |

**2. Chantier Creek Lakeside Use Area**

Site located north and west of the parking lot. Banks steep. No exposed bottom or gently inclined shores at this point. No evidence of bivalves observed.

No Unionids Collected.

**3. Lakeside Use Area near dam**

Site is perhaps 100 yards north of the dam. Shores give evidence of slumping in this area with exposed areas consisting of a series of terraces (a flat surface, succeeded by a steep bank which then gives way to another flattened area, etc).

No Unionids Collected.

**4. East Shore Lakeside Use Area**

Some elevated ridges along the bottom of the reservoir and one small flat cove were exposed due to lowered water levels. The later is located northeast of the parking lot. In addition, a cove located south of the parking lot was investigated. No evidence of bivalves was recovered.

No Unionids Collected.

**5. Peoria Flats Lakeside Use Area**

Coves west of the parking lot were investigated with no results. Further to the west, a very long spit of land was noted parallel to the shore, and separated from the shore by a narrow body of water (except at the far west end). Some unionids were collected along the shore (not along the spit) approximately adjacent to the middle of the spit. These included a fair number of *Pyganodon grandis* that were not retained.

## Unionids Collected:

|                          |         |
|--------------------------|---------|
| <i>Potamilus alatus</i>  | 1       |
| <i>Pyganodon grandis</i> | 5 + 1/2 |

**6. Cow Creek Recreation Area**

Bivalves were collected along some of the reaches of this cove furthest from any major unsheltered water. Several young specimens contained decomposing soft parts. Most of the shells here were somewhat weathered, and many single valves were not retained. This site is to the right of the road leading into the Cow Creek Recreation Area at the entrance, and about one-half mile from the road.

## Unionids Collected:

|                            |         |
|----------------------------|---------|
| <i>Potamilus ohioensis</i> | 4       |
| <i>Pyganodon grandis</i>   | 1 + 1/2 |

**7. Cow Creek Recreation Area**

The banks along the inlet at this point are very steep and composed almost entirely of sand. Outside of one weathered specimen protruding from the middle of a 15 foot high sand bank, no other unionids were encountered.

## Unionids Collected:

|                          |   |
|--------------------------|---|
| <i>Pyganodon grandis</i> | 1 |
|--------------------------|---|

**8. Cow Creek Recreation Area**

This site is at the western end of the recreation area, and directly fronts the waters of Lake Oahe, south of the point where the inundated Cow Creek joins the Lake. It consists of a very large area of gently inclining exposed beach, generally composed of sand or sand and gravel. No evidence of unionids was observed at this site despite considerable effort.

No Unionids Collected.

**9. Okobojo Point Recreation Area**

Unfortunately, no notes were made on this site, other than the fact that unionids were uncommon.

## Unionids Collected:

|                            |         |
|----------------------------|---------|
| <i>Potamilus ohioensis</i> | 1 + 1/2 |
| <i>Pyganodon grandis</i>   | 2       |

**10. Little Bend Lakeside Use Area**

The site comprises several somewhat sheltered coves located southeast of the public area at the first left turn-off from the main access road. Specimens were found only in the most sheltered portions of two of these coves. All specimens seen were collected.

## Unionids Collected:

|                            |     |
|----------------------------|-----|
| <i>Potamilus ohioensis</i> | 1   |
| <i>Pyganodon grandis</i>   | 1/2 |

**11. Bush's Landing Lakeside Use Area**

The site was a broad, gently inclined mud and sand beach located south of the boat ramp. No evidence of bivalves was obtained here. It is possible the cove is not deep enough (in terms of size, not depth of water) to provide adequate shelter from wave action at this point.

No Unionids Collected.

**12. Sutton Bay Lakeside Use Area**

Most specimens were collected south of the boat ramp in relatively sheltered habitats. A beat up fragment of *Lampsilis siliquoidea* was recovered north of the boat ramp in an area that was not sheltered. It may be that mussels in unprotected portions of the reservoir lie in deeper water than do many individuals found in the sheltered coves.

## Unionids Collected:

|                              |         |
|------------------------------|---------|
| <i>Lampsilis siliquoidea</i> | 1/2     |
| <i>Leptodea fragilis</i>     | 1       |
| <i>Potamilus ohioensis</i>   | 1 + 1/2 |
| <i>Pyganodon grandis</i>     | 1/2     |

**13. East Whitlock Lakeside Use Area**

The site included a portion of the east shore located immediately north of the campground. This area is a gently inclined shore composed of mud and sand. Mussels were found scattered along this area. A similar very large area was observed to the north and west extending for several miles. It seems likely all of these areas provide good habitat for mussels. A small area south of the campground was also tested, however, only a single valve of *Lampsilis siliquoidea* was collected from this reach. It should be noted that the second area borders directly upon a very large bay, and as such is essentially unsheltered.

## Unionids Collected:

|                              |         |
|------------------------------|---------|
| <i>Lampsilis siliquoidea</i> | 2 + 1/2 |
| <i>Leptodea fragilis</i>     | 2 + 1/2 |
| <i>Potamilus ohioensis</i>   | 4 + 1/2 |
| <i>Pyganodon grandis</i>     | 1       |

**14. West Whitlock Lakeside Use Area**

This collection site is located east of the road leading to the West Whitlock Lakeside Use Area, and the site may not be in the public access area at all. The site was situated in a sheltered area away from the large bay that borders the West

Whitlock campground. Mussels were frequent here. Many of the thin shelled species were seen only as single valves, and it was difficult to collect complete specimens. *Potamilus ohiensis* was much more frequent than is indicated by the actual number of specimens collected.

Unionids Collected:

|                              |         |
|------------------------------|---------|
| <i>Lampsilis siliquoidea</i> | 6       |
| <i>Leptodea fragilis</i>     | 1/2     |
| <i>Potamilus ohiensis</i>    | 11      |
| <i>Pyganodon grandis</i>     | 3 + 1/2 |

**15. Dodge Draw Lakeside Use Area**

The site was a very sheltered cove that was nearly dry. Unfortunately, the area's exposed had been intensively trampled by cattle. The only shells found were in an untrampled reach along a fence line. It is likely that the entire cove may have been good habitat, but shells in almost the entire area if found would have been shattered.

Unionids Collected:

|                           |   |
|---------------------------|---|
| <i>Potamilus ohiensis</i> | 2 |
| <i>Pyganodon grandis</i>  | 1 |

**16. Le Beau Lakeside Use Area**

This site includes several coves to the northeast of the parking area. Larger mussels were collected in the most sheltered portion of the first cove, while a reach of the site exposed to some wave action on the day of the investigation of the site produced a number of fairly young individuals.

Unionids Collected:

|                              |         |
|------------------------------|---------|
| <i>Lampsilis siliquoidea</i> | 2       |
| <i>Leptodea fragilis</i>     | 3       |
| <i>Potamilus ohiensis</i>    | 1 + 1/2 |
| <i>Pyganodon grandis</i>     | 8       |

**17. Swan Creek Lakeside Use Area – behind small dike**

This site was located along the shoreline between and to the north of the two westward facing ramps. Generally, shells were lacking along this reach. The primary exception was an area of several hundred feet behind a raised dike that in turn fronted the lake. Behind this structure (which appeared to be natural) was an area of muck within which were a number of mussels. The shore elsewhere along this reach consisted of sand, sand and mud or gravel.

Unionids Collected:

|                                |         |
|--------------------------------|---------|
| <i>Lasmigona c. complanata</i> | 1       |
| <i>Leptodea fragilis</i>       | 2 + 2/2 |
| <i>Potamilus ohiensis</i>      | 7       |
| <i>Pyganodon grandis</i>       | 3       |

**18. Swan Creek Lakeside Use Area – large mud flat**

This site consists of mud flats adjacent to Swan Creek and is located on either side of the south boat ramp at this use area. A very large portion of lake bottom was exposed at this site. Specimens seen were many times those actually collected here. It was difficult to find complete specimens, due to predation. Often only single valves were seen or the matching valve was partially shattered. The fact that the substrates here were partially frozen several inches below the surface was the only factor that enabled collection of the site. It was not possible to venture within six feet of the water without sinking deeply into the muck.

Unionids Collected:

|                              |   |
|------------------------------|---|
| <i>Lampsilis siliquoidea</i> | 4 |
| <i>Leptodea fragilis</i>     | 1 |
| <i>Potamilus ohiensis</i>    | 3 |

**19. Walth Bay Lakeside Use Area**

The collection site was a very narrow bay immediately south of the parking area. Most specimens were collected from soft mud at the south end of this bay, though some specimens were also found on either shore in about the center of the use area.

Unionids Collected:

|                              |         |
|------------------------------|---------|
| <i>Lampsilis siliquoidea</i> | 1 + 2/2 |
| <i>Leptodea fragilis</i>     | 1       |
| <i>Potamilus ohiensis</i>    | 2       |
| <i>Pyganodon grandis</i>     | 2 + 2/2 |

**20. Thomas Bay Lakeside Use Area**

No Identifiable Unionids Collected: Only a few broken shell fragments were recovered.

**21. Blue Blanket**

This site encompassed a sheltered bay to the northeast of the parking area. Shells were usually somewhat weathered in this area, and it is possible many had been washed up onto the shores.

Unionids Collected:

|                              |         |
|------------------------------|---------|
| <i>Lampsilis siliquoidea</i> | 7 + 2/2 |
| <i>Leptodea fragilis</i>     | 1 + 1/2 |
| <i>Potamilus ohiensis</i>    | 2 + 1/2 |
| <i>Pyganodon grandis</i>     | 1 + 1/2 |

**22. Indian Creek Lakeside Use Area**

This site is located southeast of the south ramp, and the Blue Blanket public access area can be seen about one half mile south of this site. The site is largely separated from the main waters of the lake by a dike-like structure. It is unclear if this is a natural feature, however, when the waters in the lake are higher, it is no doubt submerged beneath the lake. Mussels were found in the soft mud substrates of the area behind the dike, and along the backside of the dike itself. Specimens were numerous in these areas:

Unionids Collected:

|                                |          |
|--------------------------------|----------|
| <i>Lampsilis siliquoidea</i>   | 13 + 1/2 |
| <i>Lasmigona c. complanata</i> | 3        |
| <i>Leptodea fragilis</i>       | 1        |
| <i>Potamilus ohiensis</i>      | 7        |
| <i>Pyganodon grandis</i>       | 5        |

**23. Indian Creek Lakeside Use Area**

This site consisted of a narrow cove, and several connected small lakes. The cove was quite sheltered, and at the time of collection, a portion of the water surface was ice covered. Mussels were collected from the most sheltered portions of the cove, while they were usually absent elsewhere. Most specimens were collected near or in soft mud.

Unionids Collected:

|                                |     |
|--------------------------------|-----|
| <i>Lampsilis siliquoidea</i>   | 7   |
| <i>Lasmigona c. complanata</i> | 1   |
| <i>Potamilus ohiensis</i>      | 1/2 |
| <i>Pyganodon grandis</i>       | 2   |

**24. Reservoir Bottom at Mobridge**

This site was the most productive site collected in South Dakota both in terms of the number of shells collected, and in terms of species diversity. It is an area of shore sheltered by a long spit of raised land that is open to the lake to the southeast, and connects with the shore on the northwest. Most specimens were collected from the shore, and not from the spit.

Unionids Collected:

|                                |          |
|--------------------------------|----------|
| <i>Lampsilis siliquoidea</i>   | 64       |
| <i>Lasmigona c. complanata</i> | 1 + 1/2  |
| <i>Leptodea fragilis</i>       | 3        |
| <i>Ligumia subrostrata</i>     | 1        |
| <i>Potamilus ohiensis</i>      | 10 + 5/2 |
| <i>Pyganodon grandis</i>       | 3 + 1/2  |

**25. Shaw Creek Lakeside Use Area**

This site is a relatively deep cove (ie. sheltered), however, it had been extensively trampled by cattle, and as a result very few specimens were collected. The site included the north shore of the inlet, both east and west of the boat ramp. The ramp was completely out of the water at the time of the collection.

Unionids Collected:

|                              |         |
|------------------------------|---------|
| <i>Lampsilis siliquoidea</i> | 1 + 1/2 |
| <i>Leptodea fragilis</i>     | 1       |
| <i>Potamilus ohioensis</i>   | 5       |

**26. Pollock – Southwest boat ramp**

This site was located in mud flats adjacent to a small creek south of the southwest boat ramp. Substrates consisted of extremely thick and deep muck, and numerous specimens were noted that could not be examined due to the deep muck. Many specimens were represented by only single valves, and it was difficult to find complete specimens. Unionids were not particularly numerous in this area considering the extent of the collection effort expended here.

Unionids Collected:

|                              |         |
|------------------------------|---------|
| <i>Lampsilis siliquoidea</i> | 2       |
| <i>Leptodea fragilis</i>     | 1 + 3/2 |
| <i>Potamilus ohioensis</i>   | 1       |
| <i>Pyganodon grandis</i>     | 1 + 2/2 |

**27. Pollock – Northeast boat ramp**

This site is located northeast of the previous site, along the south shore of a very large inlet of Lake Oahe. It is about one mile west of the state highway 1804. The specimens were collected primarily east of the boat ramp that was out of the water at the time this site was visited. Some individuals were also collected in a sheltered area just west of the ramp.

Unionids Collected:

|                              |         |
|------------------------------|---------|
| <i>Lampsilis siliquoidea</i> | 6       |
| <i>Leptodea fragilis</i>     | 4 + 1/2 |
| <i>Potamilus ohioensis</i>   | 1       |
| <i>Pyganodon grandis</i>     | 1       |

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|                        |                   |
|------------------------|-------------------|
| <b>TOTAL SPECIMENS</b> | <b>252 + 42/2</b> |
|------------------------|-------------------|

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**Areas Visited but Not Collected:**

- A.           **West Shore Lakeside Use Area**
- B.           **Spring Creek Recreation Area**
- C.           **Oahe Lake at US Route 212 Crossing**
- D.           **State Line Recreation Area**

**APPENDIX 2  
NAMES OF SPECIES  
RECOVERED FROM LAKE OAHE**

| <u>Scientific Name*</u>                       | <u>Common Name*</u> |
|---|---------------------|
| <i>Lampsilis siliquoidea</i> (Barnes, 1823)   | Fatmucket           |
| <i>Lasmigona c. complanata</i> (Barnes, 1823) | White Heelsplitter  |
| <i>Leptodea fragilis</i> (Rafinesque, 1820)   | Fragile Papershell  |
| <i>Ligumia subrostrata</i> (Say, 1831)        | Pondmussel          |
| <i>Potamilus alatus</i> (Say, 1817)           | Pink Heelsplitter   |
| <i>Potamilus ohiensis</i> (Rafinesque, 1820)  | Pink Papershell     |
| <i>Pyganodon grandis</i> (Say, 1829)          | Giant Floater       |

\* As given in Turgeon et al (1998).

**APPENDIX 3**  
**DISPOSITION of SPECIMENS COLLECTED**

**\* To be donated to the Academy of Natural Sciences, Philadelphia, PA**

|         |                              |   |   |
|---------|------------------------------|---|---|
| Site 5  | <i>Pyganodon grandis</i>     | 1 |   |
| Site 14 | <i>Potamilus ohiensis</i>    | 1 |   |
| Site 16 | <i>Pyganodon grandis</i>     | 1 |   |
| Site 18 | <i>Leptodea fragilis</i>     | 1 |   |
|         | <i>Potamilus ohiensis</i>    | 1 |   |
| Site 19 | <i>Lampsilis siliquoidea</i> | 2 |   |
| Site 22 | <i>Pyganodon grandis</i>     | 1 |   |
|         | <i>Potamilus ohiensis</i>    | 1 |   |
|         | <i>Lampsilis siliquoidea</i> | 1 |   |
| Site 24 | <i>Potamilus ohiensis</i>    | 1 | ½ |
|         | <i>Lampsilis siliquoidea</i> | 2 |   |

**To be donated to the Illinois Biological Survey, Champaign, IL.**

|         |                              |   |   |
|---------|------------------------------|---|---|
| Site 5  | <i>Pyganodon grandis</i>     | 1 |   |
| Site 14 | <i>Potamilus ohiensis</i>    | 1 |   |
| Site 16 | <i>Pyganodon grandis</i>     | 1 |   |
| Site 17 | <i>Potamilus ohiensis</i>    | 1 |   |
|         | <i>Lampsilis siliquoidea</i> | 1 |   |
| Site 22 | <i>Pyganodon grandis</i>     | 1 |   |
|         | <i>Potamilus ohiensis</i>    | 1 |   |
|         | <i>Lampsilis siliquoidea</i> | 1 |   |
| Site 24 | <i>Potamilus ohiensis</i>    | 1 | ½ |
|         | <i>Lampsilis siliquoidea</i> | 2 |   |

**\* To be donated to the Museum of Comparative Zoology, Harvard University, Cambridge, MA**

|         |                              |   |     |
|---------|------------------------------|---|-----|
| Site 14 | <i>Potamilus ohiensis</i>    | 1 | 2/2 |
|         | <i>Lampsilis siliquoidea</i> | 1 |     |
| Site 16 | <i>Pyganodon grandis</i>     | 1 |     |
| Site 19 | <i>Lampsilis siliquoidea</i> | 2 |     |
| Site 22 | <i>Pyganodon grandis</i>     | 1 |     |
|         | <i>Potamilus ohiensis</i>    | 1 |     |
|         | <i>Lampsilis siliquoidea</i> | 1 |     |
| Site 24 | <i>Potamilus ohiensis</i>    | 1 | ½   |
|         | <i>Lampsilis siliquoidea</i> | 2 |     |

**To be donated to the National Museum of Natural History, Washington, DC**

|         |                                |   |   |
|---------|--------------------------------|---|---|
| Site 1  | <i>Potamilus ohiensis</i>      | 1 |   |
| Site 16 | <i>Potamilus ohiensis</i>      | 1 |   |
|         | <i>Leptodea fragilis</i>       | 1 |   |
| Site 17 | <i>Potamilus ohiensis</i>      | 1 |   |
|         | <i>Lampsilis siliquoidea</i>   | 1 |   |
| Site 22 | <i>Potamilus ohiensis</i>      | 1 |   |
|         | <i>Lampsilis siliquoidea</i>   | 1 |   |
| Site 24 | <i>Pyganodon grandis</i>       | 1 |   |
|         | <i>Lasmigona c. complanata</i> |   | ½ |
|         | <i>Leptodea fragilis</i>       | 1 |   |
|         | <i>Potamilus ohiensis</i>      | 1 | ½ |
|         | <i>Lampsilis siliquoidea</i>   | 2 |   |

**To be donated to the University of Michigan Museum of Zoology, Ann Arbor, MI**

|         |                                |   |     |
|---------|--------------------------------|---|-----|
| Site 1  | <i>Potamilus ohiensis</i>      | 1 |     |
| Site 14 | <i>Potamilus ohiensis</i>      | 1 | 2/2 |
|         | <i>Lampsilis siliquoidea</i>   | 1 |     |
| Site 16 | <i>Pyganodon grandis</i>       | 1 |     |
|         | <i>Leptodea fragilis</i>       | 1 |     |
| Site 18 | <i>Potamilus ohiensis</i>      | 1 |     |
| Site 22 | <i>Lasmigona c. complanata</i> | 1 |     |
|         | <i>Potamilus ohiensis</i>      | 1 |     |
|         | <i>Lampsilis siliquoidea</i>   | 1 |     |
| Site 24 | <i>Pyganodon grandis</i>       | 1 |     |
|         | <i>Leptodea fragilis</i>       | 1 |     |
|         | <i>Potamilus ohiensis</i>      | 2 |     |
|         | <i>Lampsilis siliquoidea</i>   | 2 |     |
| Site 27 | <i>Leptodea fragilis</i>       | 2 |     |
|         | <i>Lampsilis siliquoidea</i>   | 3 |     |

**To be donated to Dr. David H. Stansbery**

|         |                              |   |  |
|---------|------------------------------|---|--|
| Site 24 | <i>Lampsilis siliquoidea</i> | 2 |  |
|---------|------------------------------|---|--|

**Retained by Ellet Hoke**

|         |                                |   |
|---------|--------------------------------|---|
| Site 14 | <i>Potamilus ohiensis</i>      | 1 |
|         | <i>Lampsilis siliquoidea</i>   | 1 |
| Site 22 | <i>Lasmigona c. complanata</i> | 1 |
|         | <i>Potamilus ohiensis</i>      | 1 |
|         | <i>Lampsilis siliquoidea</i>   | 2 |
| Site 24 | <i>Lampsilis siliquoidea</i>   | 2 |

**Donated to the Museum of Biological Diversity, Ohio State University, Columbus, Ohio.**

All specimens not enumerated above. This includes the vast majority of all specimens collected during this survey.

**\* NOTE:** To date the Academy of Natural Sciences and the Museum of Comparative Zoology have not responded to my offer to donate specimens from this survey. If no response is received within a reasonable period of time, the specimens allocated to these institutions will be donated to one or more of the other organizations listed above.