

A SURVEY TO DETERMINE THE NEED FOR A CONTINUING EDUCATION  
PROGRAM AT THE COLLEGE OF NATURAL RESOURCES OF THE  
UNIVERSITY OF WISCONSIN AT STEVENS POINT

By

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The members of the Graduate Committee:

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ABSTRACT

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Thomas L. Castonguay

A survey of the natural resource related industries and agencies in the central and northern areas of Wisconsin was conducted to determine if there is a demand for a continuing education program at the College of Natural Resources of the University of Wisconsin at Stevens Point and if so, which courses and types of instruction are desired.

This survey determined that there is sufficient interest in this type of educational program to warrant more detailed study and ultimate implementation.

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## Chapter 1

INTRODUCTION

Much of the industry and many of the public agencies within the northern and central areas of Wisconsin are directly involved in management and/or utilization of natural resources. These industries and agencies are widely dispersed among the generally small communities common to these areas. Currently, few opportunities exist for their natural resources professional and semi-professional employees to update or expand their professional educations.

This study was initiated in September, 1975. Its purpose was to determine if enough of the people having natural resources related occupations are interested in participating in a continuing education program to warrant the College of Natural Resources of the University of Wisconsin at Stevens Point instituting such a program. It also sought to identify the courses that have greatest demand, the type of instruction that is preferred, and the locations and times that would be available for holding classes.

The study area was designated as that part of the State of Wisconsin north of an east-west line projected through the City of Portage. Since industrial concentration is greatest in that part of the study area lying in the Wisconsin and Fox River valleys, an attempt was made to personally contact the natural resource related companies and agencies located in these areas. A mail questionnaire was used to contact industries and agencies pertinent to this study but not located in these areas of concentration.

The results of this study provide the College of Natural Resources of the University of Wisconsin at Stevens Point with the information necessary to determine if there is sufficient interest in this continuing education program to warrant its establishment. Further, it indicates which courses are most likely to be successful, and when and where these courses should be taught. This study supplies general information that can be used to gain the specific information needed to start a program that will be useful to the industries, agencies, municipalities, and communities within the study area.

## Chapter 2

PROCEDURE

The objectives of this project were determined by the College of Natural Resources at the University of Wisconsin - Stevens Point prior to its assignment.

Preliminary procedures necessary before undertaking the survey were:

(1) A thorough review of the courses currently available through the College of Natural Resources at the University of Wisconsin - Stevens Point was conducted. The catalogue was examined and instructors consulted concerning the courses and their content. A course list was prepared. For the purpose of this project most graduate and basic courses were not included because each would have to be greatly modified before being taught as an extension-type course, therefore any description made at this time would be invalid. The course descriptions used in the survey were based on the catalogue descriptions modified with comments by the instructors of the listed courses.

(2) A survey questionnaire and cover letters were also prepared.<sup>1</sup> The initial draft of the course list, questionnaire, and cover letters were submitted to the faculty of the College of Natural Resources for comment.

(3) A list of industries and agencies in the project area was assembled. Several sources were used in the preparation of this list.<sup>2</sup> The final list (see Appendices A and B) should not be considered complete

because none of the sources used in its preparation is complete. It can be considered representative of the natural resources related industries and agencies of the area.

When these materials had been prepared in final form, three types of mailing packets were assembled and dispatched. These packets were typed for distribution to:

(1) companies, state and federal agencies, counties, and municipalities in the Wisconsin River Valley, the Fox River Valley and points in between which were so located that they could be scheduled for personal interviews;

(2) companies, agencies, counties, and municipalities outside the Wisconsin and Fox River Valleys that could not be interviewed in person;

(3) University of Wisconsin Extension Agents in the Central District for dissemination to any individual they felt might be interested in this program.

The packets varied in the content of their cover letters and in that stamped return envelopes were provided with the materials for the extension agents and for those agencies and companies that it was not possible to interview in person. Also, the questionnaire for the extension agents' packets was abridged slightly. (All packet materials are included in Appendix E.)

After the initial mailing, attempts were made to schedule appointments with the organizations which were sent the Type I packets. Scheduling appointments and conducting interviews continued until the last two weeks of the '75-'76 school year. In order to complete this project during the '75-'76 school year, it was necessary to schedule more than

one appointment per day. This proved difficult. Even when several companies and agencies were located close together, their personnel officers were rarely available at compatible times during one day, or even on the same day.

Because of this difficulty and in an attempt to elicit greater response from the Fox River Valley organizations, a second mailing was made midway through the second semester. This time only mail-response type packets were sent.

## Chapter 3

RESULTS

The response to the packet distribution was generally satisfactory. The first mailing, consisting of fifty-eight packets of two types, produced thirty-seven responses (63.8% of those sent). An additional seventeen individual responses were received as a result of the packet distribution by the University of Wisconsin Extension Service Agents. The second mailing, consisting of twenty-two packets (seven of which were repeats) yielded twelve responses (54.5% of those sent). Overall, attempts were made to contact seventy-three companies and agencies of which forty-nine responded (67.1% total response).

Thirty-four of the companies and agencies contacted through the two mailings gave positive responses (46.5% of the total mailing) as did the seventeen responding individuals contacted by the Extension Agents. Fifteen companies and agencies gave negative responses (20.6% of the total mailing) and twenty-four companies and agencies did not respond (32.9% of the total mailing).

The results of the questionnaire are summarized on a copy of the questionnaire which is incorporated in this paper. These results are valid and usable but several irregularities must be taken into account in order to interpret the data realistically:

- (1) Because of company size each response to a Paper Science course indicates several potential students. Even though few responses were tallied for a given course, it would take very few such responses to fill a section.

(2) The individual responses elicited through the efforts of the Extension Agents were tallied together with the group responses.

The larger public agencies gave the program a mixed response. The Forest Service administrators representing the personnel of the Nicolet and Chequamegon National Forests were very positive. Four Soil Conservation Service Area offices were contacted: Area 1 (Spooner) and Area 2 (Eau Claire) responded negatively, whereas Area 3 (Appleton) and Area 4 (Richland Center) responded positively -- indicating that many of their employees would be interested in a wide range of courses. The response pattern of the Wisconsin Department of Natural Resources was similar to that of the Soil Conservation Service. The District Directors at Rhinelander and Eau Claire were enthusiastically positive not only feeling that the program would be very useful, but also that many of their employees would participate. No response was received from the District Director at Green Bay, and a negative response was received from the District Director at Spooner who felt that none of the personnel in his district would be interested in such a program. It should be noted that all Wisconsin Department of Natural Resources employees contacted individually were interested in taking one or more of the listed courses.

Eighteen counties and municipalities were contacted and ten (six counties and four cities) responded. All of the responses were positive, however one municipality and one county passed the questionnaire along to local Wisconsin Department of Natural Resources employees. Of the counties or cities that responded for their own staffs most were interested in courses dealing with basic natural resources management, e.g. surveying,

urban forestry, and mensuration. A more specific follow-up survey of these agencies will probably find more interest in this type of course than this initial study uncovered.

The response from the Fox River Valley industries was generally low. Eighteen companies were contacted; six did not respond, six responded positively, and six responded negatively. The 33.3% which showed interest in the program were not enthusiastic and emphasized that such courses would have to be held locally to attract their use. The reason mentioned for the general lack of interest was the presence of educational opportunities already existent in the Fox River Valley, e.g. the Fox River Valley Technical Institute, the various units of the University of Wisconsin, and the paper research institute. The consensus of opinion was that educational opportunities were already available in the area and that further effort was not necessary.

The possibility of symposiums, seminars, and conferences aroused much interest. Such activities would not be subject to the same time limitations as classroom instruction. Many symposium topics were suggested. "Environmental Impact Statements" and "New Environmental Laws and Their Implications" were frequently mentioned.

Of the courses listed as available through the College of Natural Resources seven had more than ten positive responses: Environmental Impact Statements (19), Resource Policy and Law (17), Elementary Surveying (14), Conservation Administration (11), Urban and Regional Planning Practices (11), Water Analysis (11), and Pollution Ecology (11). The most often proposed career-related courses were Business Management, Accounting, and Personnel Management.

Most of those queried who responded positively to this project would prefer evening courses for classroom instruction (the major exception being the Wisconsin Department of Natural Resources) because this time period would not disrupt their work schedules. While winter was the preferred season for scheduling any type of instruction, many of the respondents indicated that any time of the year except the summer months was acceptable. The maximum distance students would be willing to travel to attend classes was fifty miles. Fortunately, classroom space of one sort or another was available at most locations (see Appendix C).

The majority of interested companies indicated that funds would be made available to cover the costs of employee participation in a job-related course. Public agencies would only hope that such funding would be possible.

## Chapter 4

SUMMARY AND RECOMMENDATIONS

A study was conducted by the University of Wisconsin at Stevens Point to determine if the need for a natural resources continuing education program warranted the establishment of the program by the College of Natural Resources of this university. A survey of industries and agencies within northern and central Wisconsin which employ natural resources professional and semi-professional workers uncovered sufficient interest in participating in continuing education courses to justify the implementation of at least a trial program.

This program should offer the listed courses which attracted the most positive responses: i.e. Environmental Impact Statements, Elementary Surveying, Conservation Administration, Resource Policy and Law, Urban and Regional Planning Practices, Water Analysis, Pollution Ecology. It should also include job related courses. In developing these courses companies and agencies should be consulted about their content and method of presentation.

An effort should be made to find out exactly what the potential students want to learn from a given course. The most convenient location in relation to the greatest number of students should also be established for each course. Toward these ends a survey should be made in advance of the offering of any course. Such a survey should question prospective students/companies about their preferences in regard to title of course, course content, dates of offering, time and location. Either a telephone or mail survey would be satisfactory -- the telephone survey would

insure a response, but a mail survey would provide more information from those who did respond.

Prior to the actual start of a course or symposium every possible effort should be made to inform employes of public agencies of its availability. The survey indicated that these people are interested in such programs but often suffer from lack of advance information about them.

This project successfully identified the need and desire for continuing education in natural resource related subjects within the University of Wisconsin - Stevens Point area. The mechanics involved in establishing the program requires further specific study.

NOTES

1. With the assistance and advice of the Office of Career Counseling and Placement for Liberal Arts and Business, UWSP; Orland E. Radke, Director of Extended Services, UWSP; and Joe Tuss, Director, Central Division -- University of Wisconsin-Extension.
  
2. Wisconsin Primary Wood Using Directory (Wisconsin Department of Natural Resources, 1974)  
Classified Directory of Wisconsin Manufacturers 1975 and 1976 (Wisconsin Manufacturers Association).  
Meryl I. Castonguay, Forest Tax Law Field Specialist, WDNR.

APPENDICES

Companies and Organizations Contacted  
Through First Mailing

Key:   \* mail response                   0 first and second mailing  
      \*\* personal interview           + positive response  
   - negative response  
   DNR answered by a local DNR employee

**Offices of City Forests, Parks, and Engineering; City Hall; Wausau, Wisconsin 54401	+
**American Can Company; Post Office Box 702; Neenah, Wisconsin 54956	-
**American Can Company; Post Office Box 790; Green Bay, Wisconsin 54301	-
**Tigerton Lumber Company; Tigerton, Wisconsin 54486	+
**Owens-Illinois, Inc.; Tomahawk, Wisconsin 54487	+
Connor Forest Industries; P. O. Box 847; 207 N. 1st Ave.; Wausau, Wisconsin 54401	0-
Kimberly-Clark Corporation; North Lake Street; Neenah, Wisconsin 54963	0+
*Scott Paper Company; 106 E. Central Street; Oconto Falls, Wisconsin 54154	-
**Thilmany Pulp and Paper Company; Stribley Road; Kaukauna, Wisconsin 54130	+
**SCS Area 3 Office; 3019 West Spencer Street; Appleton, Wisconsin 54911	+
**Nicolet National Forest Headquarters; Rhinelander, Wisconsin 54501	+
**Offices of City Forests, Parks, and Engineering; City Hall; Wisconsin Rapids, Wisconsin 54494	+
**Nokomis Lumber Company; Post Office Box 298; Wausau, Wisconsin 54401	+
Charmin Paper Products; Post Office Box 1510; Green Bay, Wisconsin 54305	0

**Wisconsin Timber and Land Company; Mattoon, Wisconsin 54450	-
**Nekoosa Edwards Paper Company; 100 Wisconsin River Drive; Port Edwards, Wisconsin 54469	+
**Consolidated Papers, Inc.; Post Office Box 50; Wisconsin Rapids, Wisconsin 54494	+
**Mosinee Paper Mills Company; East Main Street; Mosinee, Wisconsin 54455	+
**Appleton Papers Division, NCR; Post Office Box 348; 825 E. Wisconsin Avenue; Appleton, Wisconsin 54911	+
**Offices of County Forests, Parks, and Engineering; Marathon County Court House; Wausau, Wisconsin 54401	+
**American Can Company; Rothschild, Wisconsin 54474	+
**Offices of City Forests, Parks, and Engineering; City Hall; Stevens Point, Wisconsin 54481	+
**Tomahawk Power and Pulp Company; Tomahawk, Wisconsin 54487	+
**St. Regis Paper Company; 603 W. Davenport Street; Rhineland, Wisconsin 54501	+
**Wausau Paper Mills; Brokaw, Wisconsin 54417	+
**Weyerhaeuser Company; Rothschild, Wisconsin 54474	+
**Wisconsin Valley Improvement Corporation (Robert C. Wiley); Wausau, Wisconsin 54401	+
**DNR North Central District Headquarters; Post Office Box 818; Rhineland, Wisconsin 54501	+
**Offices of County Forests, Parks, and Engineering; Wood County Court House; Wisconsin Rapids, Wisconsin 54494	DNR
**Offices of City Forests, Parks, and Engineering; City Hall; Shawano, Wisconsin 54166	DNR
**Offices of County Forests, Parks, and Engineering; Portage County Court House; Stevens Point, Wisconsin 54481	+

**Niagara of Wisconsin; P. O. Box 5; Niagara, Wisconsin 54151	-
Flintkote Paper Company; Cornell, Wisconsin 54732	0
Goodman Lumber Company; Goodman, Wisconsin 54125	
*Badger Paper Mills; Post Office Box 149; W. Front Street; Peshtigo, Wisconsin 54157	-
Swanke Lumber Company; Ladysmith, Wisconsin 54848	
DNR Northwest District Headquarters; Post Office Box 309; Spooner, Wisconsin 54801	0-
*SCS Area 4 Office; 101 South Church Street; Richland Center, Wisconsin 53581	+
Patterson Lumber Company; Minocqua, Wisconsin 54548	
Offices of County Forests, Parks, and Engineering; Forest County Court House; Crandon, Wisconsin 54520	
Offices of County Forests, Parks, and Engineering; Taylor County Court House; Medford, Wisconsin 54451	
Offices of County Forests, Parks, and Engineering; Waushara County Court House; Wautoma, Wisconsin 54982	
*Flambeau Paper Company; Park Falls, Wisconsin 54552	-
*Superintendent, Chequamegon National Forest; Park Falls, Wisconsin 54552	+
SCS Area 1 Office; 206 Vine Street; Spooner, Wisconsin 54801	0-
Offices of County Forests, Parks, and Engineering; Ashland County Court House; Ashland, Wisconsin 54806	
Offices of County Forests, Parks, and Engineering; Iron County Court House; Hurley, Wisconsin 54534	
Offices of County Forests, Parks, and Engineering; Waupaca County Court House; Waupaca, Wisconsin 54981	
*Offices of County Forests, Parks, and Engineering; Lincoln County Court House; Merrill, Wisconsin 54452	+
Pukall Lumber Company; Post Office Box 348; Woodruff, Wisconsin 54568	

*Branham Wood Products; Eagle River, Wisconsin 54521	-
Crane Lumber Company; Chippewa Falls, Wisconsin 54729	
DNR West Central District Headquarters; 1300 W. Clairemont Avenue; Eau Claire, Wisconsin 54701	0+
SCS Area 2 Office; 2329 E. Clariemont Avenue; Eau Claire, Wisconsin 54701	0-
*Offices of County Forests, Parks, and Engineering; Clark County Court House, Neillsville, Wisconsin 54456	+
*Offices of County Forests, Parks, and Engineering; Langlade County Court House; Antigo, Wisconsin 54409	+
Offices of County Forests, Parks, and Engineering; Vilas County Court House; Eagle River, Wisconsin 54521	
Offices of County Forests, Parks, and Engineering; Price County Court House; Phillips, Wisconsin 54555	

Companies and Organizations Contacted  
Through Second Mailing

Key: * mail response	0 first and second mailing
	+ positive response
	- negative response
*Connor Forest Industries; Post Office Box 847; Wausau, Wisconsin 54401	0-
Nicolet Paper Company; Post Office Box 148; DePere, Wisconsin 54115	
*Fox River Paper Company; Post Office Box 678; Appleton, Wisconsin 54911	+
Ward Paper Company; Post Office Box 587; Merrill, Wisconsin 54452	
*Riverside Paper Company; Post Office Box 170; Appleton, Wisconsin 54911	+
*Gilbert Paper Company; Post Office Box 260; Menasha, Wisconsin 54952	-
*Fox Valley Corporation; Post Office Box 799; Appleton, Wisconsin 54911	-
Bergstrom Paper Company; Bergstrom Road; Neenah, Wisconsin 54956	
*Zimpro, Incorporated; Rothschild, Wisconsin 54474	+
Wisconsin Tissue Mills; Post Office Box 489; Menasha, Wisconsin 54952	
*DNR West Central District Headquarters; 1300 W. Clairemont Avenue; Eau Claire, Wisconsin 54701	0+
*SCS Area 1 Office; 206 Vine Street; Spooner, Wisconsin 54801	0-
*DNR Northwest District Headquarters; Post Office Box 309; Spooner, Wisconsin 54801	-
*SCS Area 2 Office; 2329 E. Clairemont Avenue; Eau Claire, Wisconsin 54701	-
Shawano Paper Mills, Inc.; Shawano, Wisconsin 54166	

Green Bay Packaging Corporation; Post Office Box 1107;  
Green Bay, Wisconsin 54305

DNR Lake Michigan District Headquarters; Green Bay,  
Wisconsin 54303

Charmin Paper Products; Post Office Box 1510; Green Bay,  
Wisconsin 54300 0

Flintkote Paper Company; Cornell, Wisconsin 54732 0

\*Little Rapids Pulp Company; 2273 Larson Road; Green Bay,  
Wisconsin 54303 -

\*Kimberly-Clark Corporation; North Lake Street; Neenah,  
Wisconsin 54963 0+

Pukall Lumber Company; Post Office Box 348; Minocqua,  
Wisconsin 54568 0

Cumulative Response to Questionnaire

UW-STEVENS POINT COLLEGE OF NATURAL RESOURCES  
CONTINUING EDUCATION SURVEY QUESTIONNAIRE

1. Would you be interested in extended education services offered by UW-Stevens Point for yourself or any of your personnel?

<u>Area</u>	<u>Yes</u>	<u>No</u>
Other than Fox River Valley or Wisconsin River Valley	7	5
Fox River Valley	5	6
Wisconsin River Valley	33	2

From what department(s) of your operation? How many individuals from each?

Less than half the respondents gave any information on this part of the question. However, most natural resource areas were introduced.

2. Which courses from the enclosed list would be of interest to your organization?

This information is recorded on attached course lists.

3. Are there any specific areas of your operation in which further education and/or training would be useful, e.g. environmental impact statement preparation, harvesting methods, percolation testing, BOD determination, chemical engineering, etc.? (Specify)

The following subjects were mentioned one or more times and have been grouped for convenience. The area source of the subject and the number of requests for the subject are indicated by the numbers following the title --

From: (other), (Fox River Valley), (Wisconsin River Valley) = Total

Communications	1,0,0	
Public speaking and expression	0,0,2	
Writing articles	0,0,2	
Communication between natural resource professionals and laymen	0,0,1	
Report writing	0,0,1	
		Total 7
Computer control	0,1,0	
Computer analysis	0,1,0	
Computers and forest inventory	0,0,1	
Computers and recreational and urban land use	0,0,1	
		Total 4
Environmental impact statements	1,1,8	
		Total 10
Wildlife management techniques	1,0,0	
Wildlife population dynamics	1,0,0	
Wildlife diseases	0,0,1	
Nonconsumptive uses of wildlife	0,0,1	
		Total 4

3.	Forest harvesting methods	1,0,3
	Logging cost analysis	0,0,3
	Tree planting	0,0,1
	Herbicides	0,0,1
	Applied silviculture	0,0,1
	Silvicultural harvesting methods	
	by cover type and species	0,0,1
	Logging engineering	0,0,1
	Urban forestry	0,0,1
	Wood technology	0,0,1

Total 14

	Aquatic vegetation identification	2,0,0
	Ichthyology	1,0,0
	Physiology - fish	1,0,0
	Aquatic entomology	1,0,0
	Water quality	0,0,2
	Fish sampling techniques and	
	interpretation	0,0,1
	Fish management	0,0,1
	Diseases of fish	0,0,1

Total 10

4.	Are there any related courses that would be beneficial, e.g. business management, economics, accounting? Please describe.	
	Business management	0,1,15
	Management by objectives	0,0,2
	Statistical analysis	0,0,1
	Statistics	0,0,3
	Economics	1,0,2
	Cost accounting	1,0,0
	Accounting	0,1,10
	Financial management	0,0,2
	Real estate appraisal	0,0,1
	Problem solving	0,0,1
	Personnel management	0,1,5
	Motivation and people	0,0,2
	Conference leadership	0,0,2
	Sociology	0,1,0
	Psychology	0,1,0
	Administration	0,0,4
	Communications	1,0,3
	Technical writing	0,0,2
	Public relations	0,0,1
	Business law (liability, tax, insurance, etc.)	0,0,1
	Computer programming	0,0,2
	Logging engineering	0,0,1
	Geology	0,0,1
	Sedimentology	0,0,1

5. Should college degree credits be available for the courses?
- |        |        |       |    |
|--------|--------|-------|----|
| Yes    | 5,4,17 | Total | 26 |
| Yes/No | 3,0,15 | Total | 18 |
| No     | 0,0,4  | Total | 4  |
6. Would you prefer having the course offered in evening sessions of one to three hours per week extending over a period of several months or in a concentrated full-time session of one to three weeks? Actual length will vary with the course taught.
- |              |        |       |    |
|--------------|--------|-------|----|
| Evening      | 6,4,27 | Total | 37 |
| Extended day | 1,0,0  | Total | 1  |
| Concentrated | 0,0,2  | Total | 2  |
| 1 day/week   | 1,0,1  | Total | 2  |
7. Could your personnel travel to attend the courses?
- |                                   |        |
|-----------------------------------|--------|
| Could attend only if held locally | 2,1,1  |
| Could travel less than 30 miles   | 2,3,11 |
| Could travel 30 to 50 miles       | 4,0,20 |
| Could travel 50 to 100 miles      | 0,0,1  |
8. Do you have any facilities that could be used in conducting these courses? (examples -- laboratories, meeting rooms, closed circuit TV, field operations) If "yes" please specify.  
Public schools were universally recommended.  
The following organizations had some facilities, chiefly meeting rooms available:
- Weyerhaeuser Company
  - Consolidated Papers, Inc.
  - Mosinee Paper Mills Company
  - Nekoosa Edwards Paper Company
  - Wood County
  - WDNR - all responding district headquarters
  - St. Regis Paper Company
  - Owens-Illinois, Inc.
  - Langlade County
  - Lincoln County
  - Zimpro, Inc.
  - City of Stevens Point
  - Portage County
9. Would the costs of attending pertinent courses be borne by the employee-student or could your administration provide funds?
- |                |        |
|----------------|--------|
| Agency/Company | 6,4,16 |
| Employee       | 2,2,1  |
| Share          | 1,0,1  |
- Course must be job-related for the company or agency to provide funding.  
Most public agencies "hope" funding will be available.

10. When would be the best time of the year to offer these courses?

Winter	6,0,19
Spring	1,0,2
Summer	0,0,2
Fall	1,0,0
Not summer	0,2,12

11. Do you feel there is a need for workshops, conferences, or symposiums on any specific natural resources or management topics? If so, in what areas?

Most respondents answered affirmatively. The most frequently mentioned topics for this type of meeting were:

- Environmental impact statement preparation
- New environmental laws and implications
- New technology and developments in forestry and papermaking
- Land-use planning

Other suggested topics were:

- Urban wildlife management
- Wildlife management for specific habitat types
- Future of wildlife management and sport hunting
- Liability
- People motivation
- Sociology and psychology related to natural resources
- Employee relations
- Real estate appraisal
- Wood strength values
- Wood technical advances
- Water regulations
- Environmental law enforcement
- Water analysis (DNR tests)
- Logging engineering
- Park maintenance
- Park law enforcement
- Park land acquisition and development
- Recreation planning

12. Are there any "special interest" programs, e.g. hunting safety, first aid, lifesaving, that you or your employees would find beneficial to attend?

First-aid and defensive driving were mentioned.

Most respondents gave negative answers or left the question blank.

COURSE-DEMAND DISTRIBUTION

Lists by Course title of companies, agencies, or individuals interested in participating in those courses. Attached maps show company locations. All courses with five or more responses are included. The first seven courses listed are the most popular, each having ten or more responses. The remainder of the list follows the order in which the courses are presented in the University of Wisconsin-Stevens Point catalog. The numbers assigned the companies listed under each course title correspond to the numbers on the maps which follow.

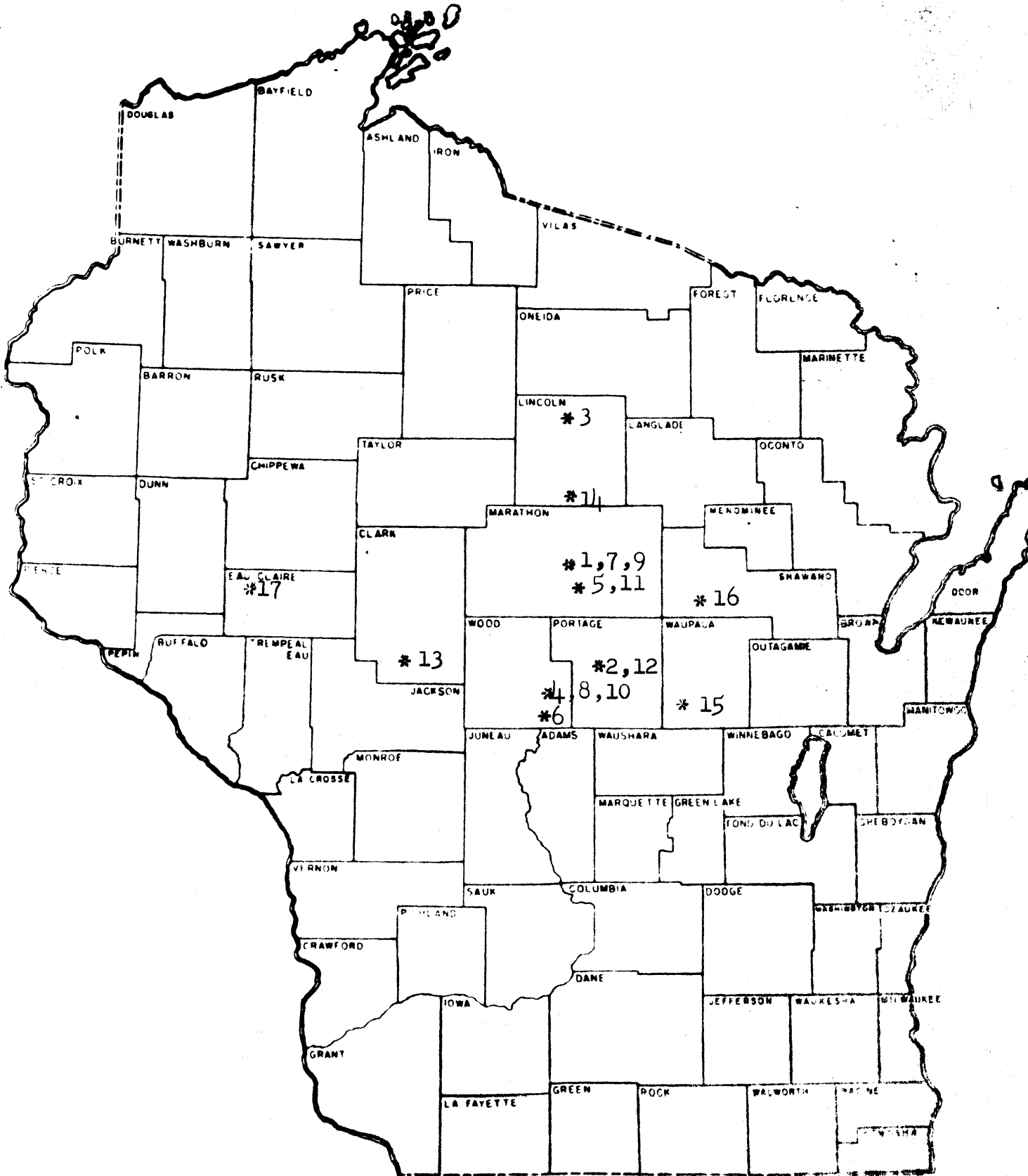
## ENVIRONMENTAL IMPACT STATEMENTS

1. Wisconsin Valley Improvement Co., Wausau
2. Portage County, Stevens Point
3. Tomahawk Power & Pulp Co., Tomahawk
4. Wood County, Wisconsin Rapids
5. American Can Co., Schofield
6. Nekoosa Edwards Paper Co., Port Edwards
7. Marathon Box Co., Wausau
8. City of Wisconsin Rapids
9. Marathon County/City of Wausau
10. Consolidated Papers, Inc., Wisconsin Rapids
11. Weyerhaeuser Co., Schofield
12. City Engineer's Office, Stevens Point
13. Clark County, Neillsville
14. Lincoln County, Merrill
15. WEX Resource Agent, Waupaca, Steve Hemshrot
16. Tigerton Lumber Co., Tigerton
17. WDNR, West Central District Headquarters, Eau Claire
18. 535 Unit of Government
19. Unidentified Company #2

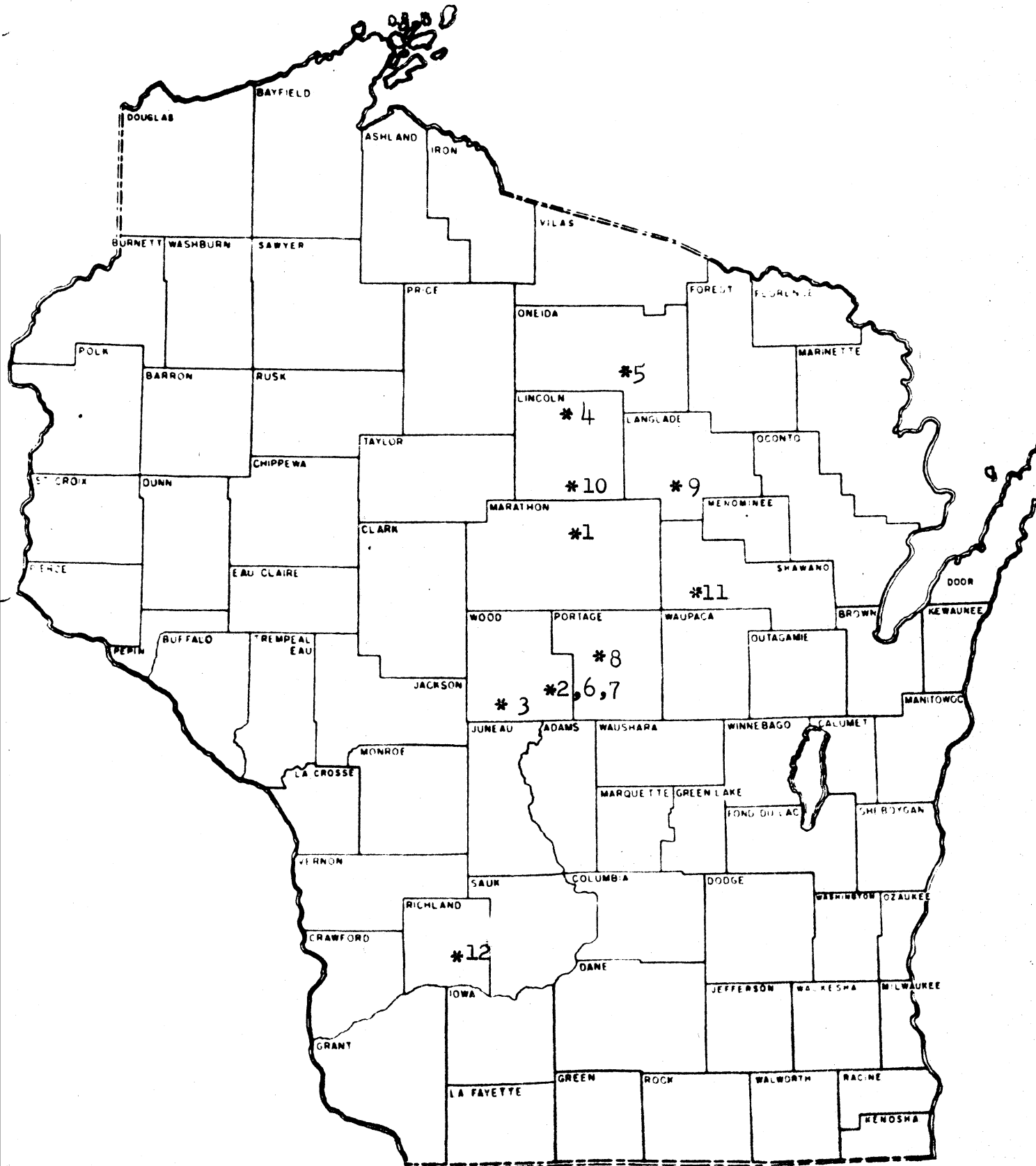
## NR 171 ELEMENTARY SURVEYING

1. Wausau Paper Mills, Brokaw
2. WDNR Employee, Wisconsin Rapids, Joseph Keena, Box 455
3. WDNR Employee, Babcock, Lawrence Jones, Box 156
4. Tomahawk Power & Pulp Co., Tomahawk
5. WDNR, North Central District Headquarters, Rhinelander
6. City of Wisconsin Rapids
7. Consolidated Papers, Inc., Wisconsin Rapids
8. City Engineer's Office, Stevens Point
9. Langlade County, Antigo
10. Lincoln County, Merrill
11. Tigerton Lumber Co., Tigerton
12. SCS Richland Center
13. 535 Unit of Government
14. Unidentified Company #1

WISCONSIN COUNTY MAP



WISCONSIN COUNTY MAP



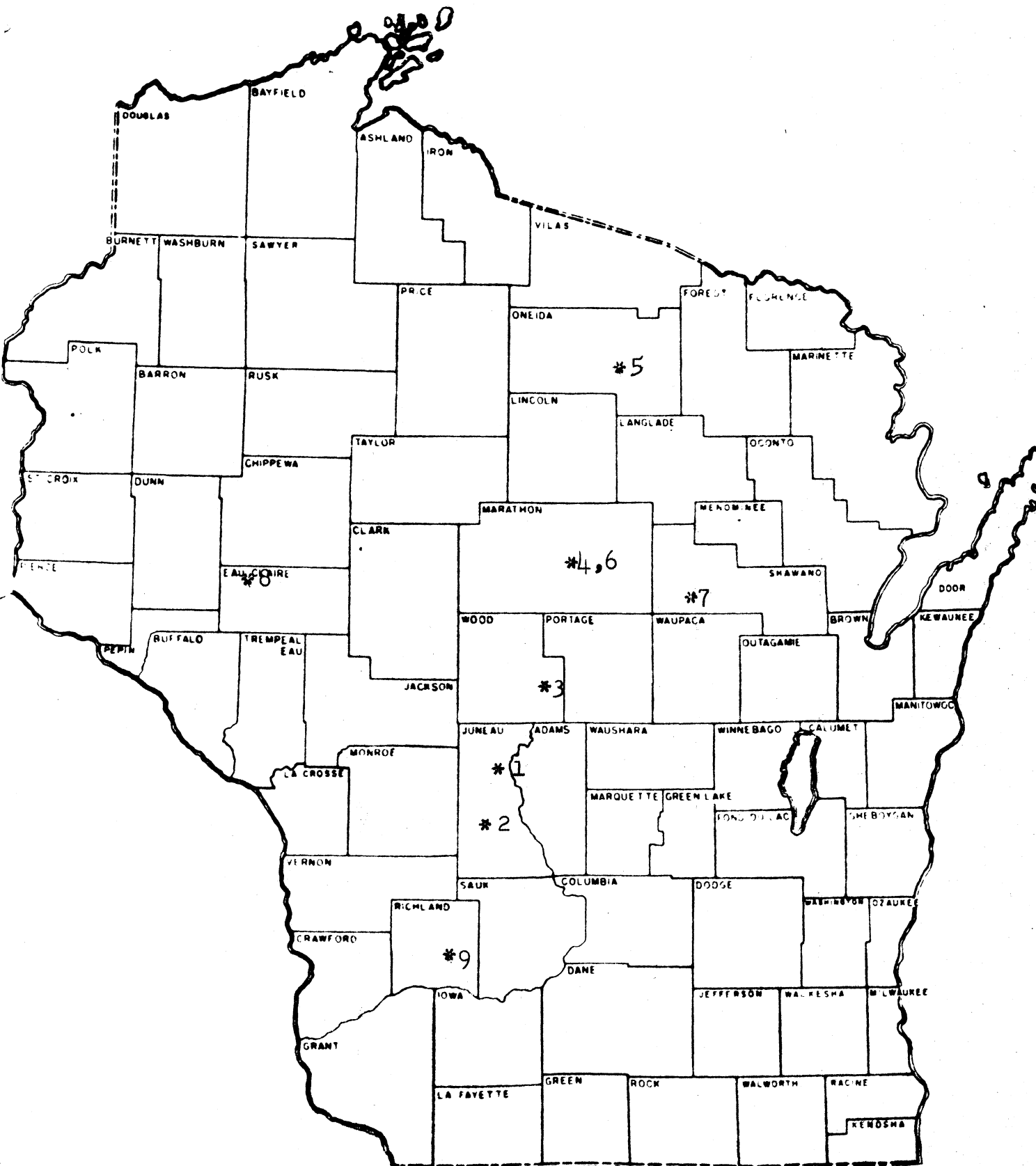
## NR 371 CONSERVATION ADMINISTRATION

1. WDNR Employee, Necedah, Floyd Ganther, Box 575
2. WDNR Employee, New Lisbon, Jeffery Norris
3. WDNR Employee, Wisconsin Rapids, Jack Zimmermann
4. Wisconsin Valley Improvement Co., Wausau
5. WDNR, North Central District Headquarters, Rhinelander
6. Marathon Box Co., Wausau
7. Tigerton Lumber Co., Tigerton
8. WDNR, West Central District Headquarters, Eau Claire
9. SCS Richland Center
10. 535 Unit of Government
11. Unknown Company #1
12. Unknown (Probably Company #2)

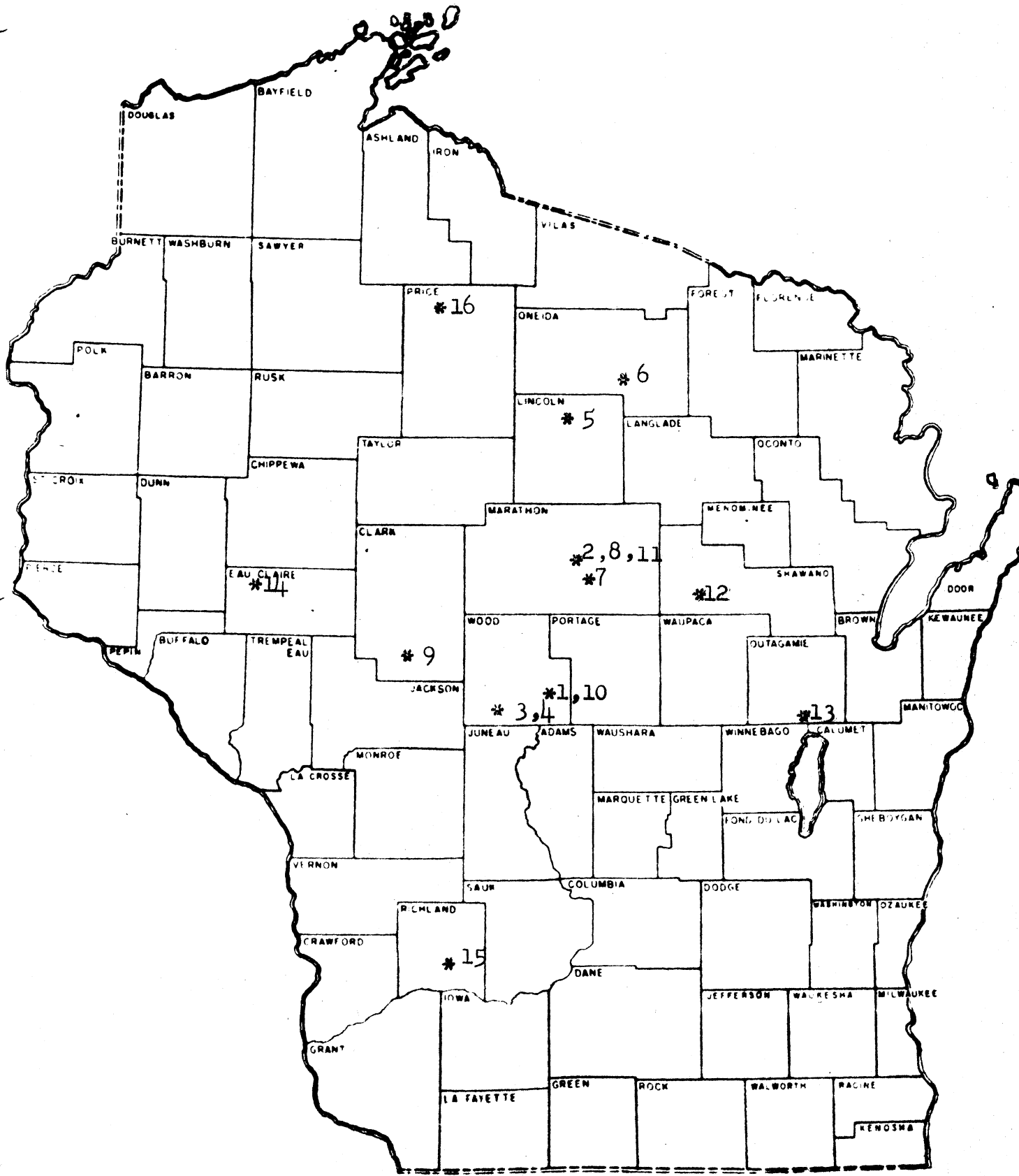
## NR 473 RESOURCE POLICY &amp; LAW

1. WDNR Employee, Wisconsin Rapids, Joseph Keena, Box 455
2. Wisconsin Valley Improvement Co., Wausau
3. WDNR Employee, Babcock, Lawrence Jonas, Box 156
4. WDNR Employee, Babcock, Joseph Haug
5. Tomahawk Power & Pulp Co., Tomahawk
6. WDNR, North Central District Headquarters, Rhinelander
7. American Can Co., Schofield
8. Marathon Box Co., Wausau
9. Clark County, Neillsville
10. WDNR Forester, Wisconsin Rapids
11. WEX Resource Agent, David Smith, Wausau
12. Tigerton Lumber Co., Tigerton
13. Appleton Papers, Appleton
14. WDNR, West Central District, Eau Claire
15. SCS Richland Center
16. Chequamegon National Forest, Park Falls
17. Unidentified Company #1

WISCONSIN COUNTY MAP



WISCONSIN COUNTY MAP



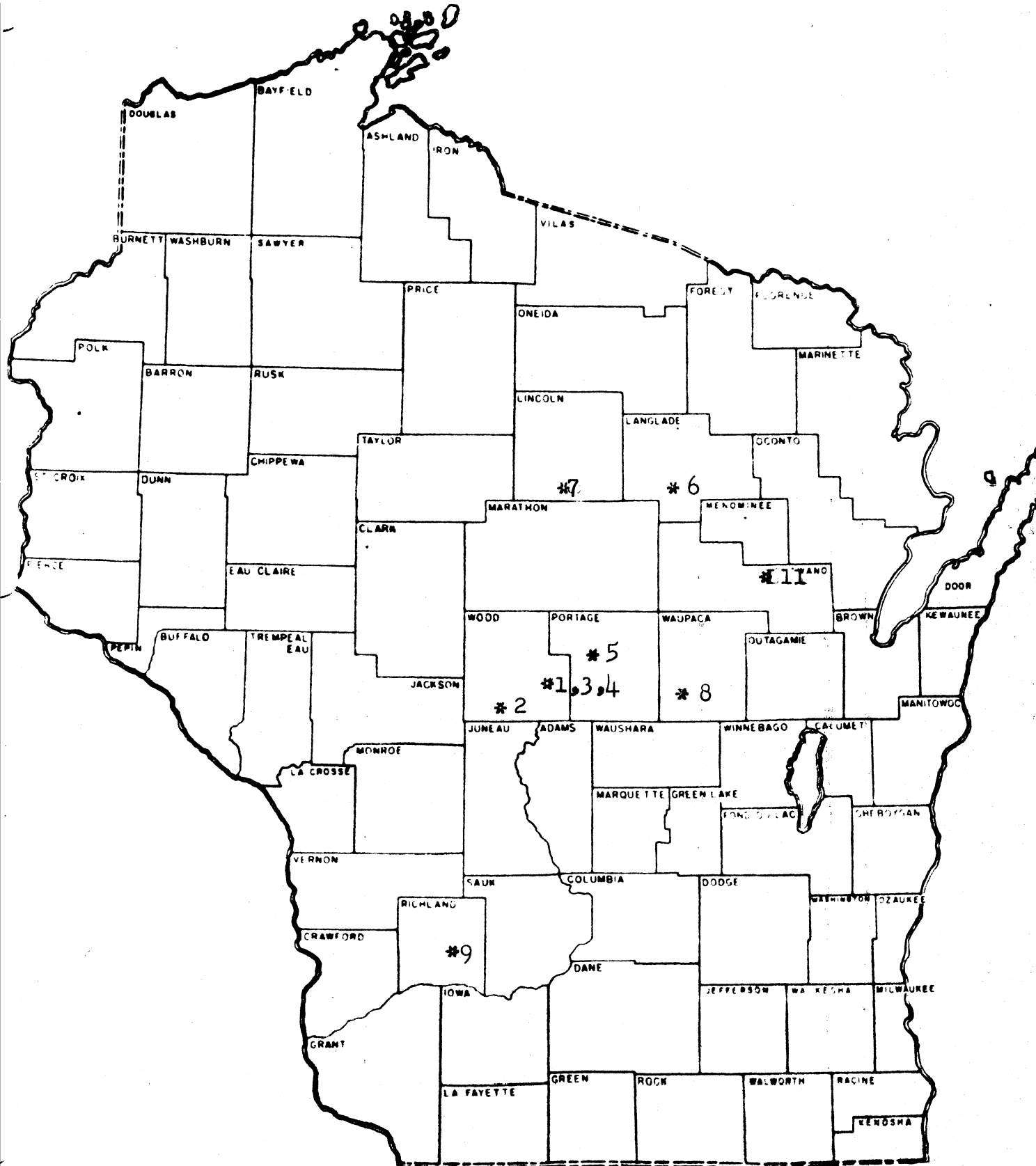
## NR 480 URBAN &amp; REGIONAL PLANNING PRACTICES

1. WDNR Employee, Wisconsin Rapids, Joseph Keena, Box 455
2. WDNR Employee, Babcock, Robert Hess
3. City of Wisconsin Rapids
4. Consolidated Papers, Inc., Wisconsin Rapids
5. City Engineer's Office, Stevens Point
6. Langlade County, Antigo
7. WEX Agents, Lincoln County, Merrill
8. WEX Agent Steve Hemshrot, Waupaca
9. SCS Richland Center
10. 535 Unit of Government
11. WDNR Employee, Shawano
12. Unidentified Company #2

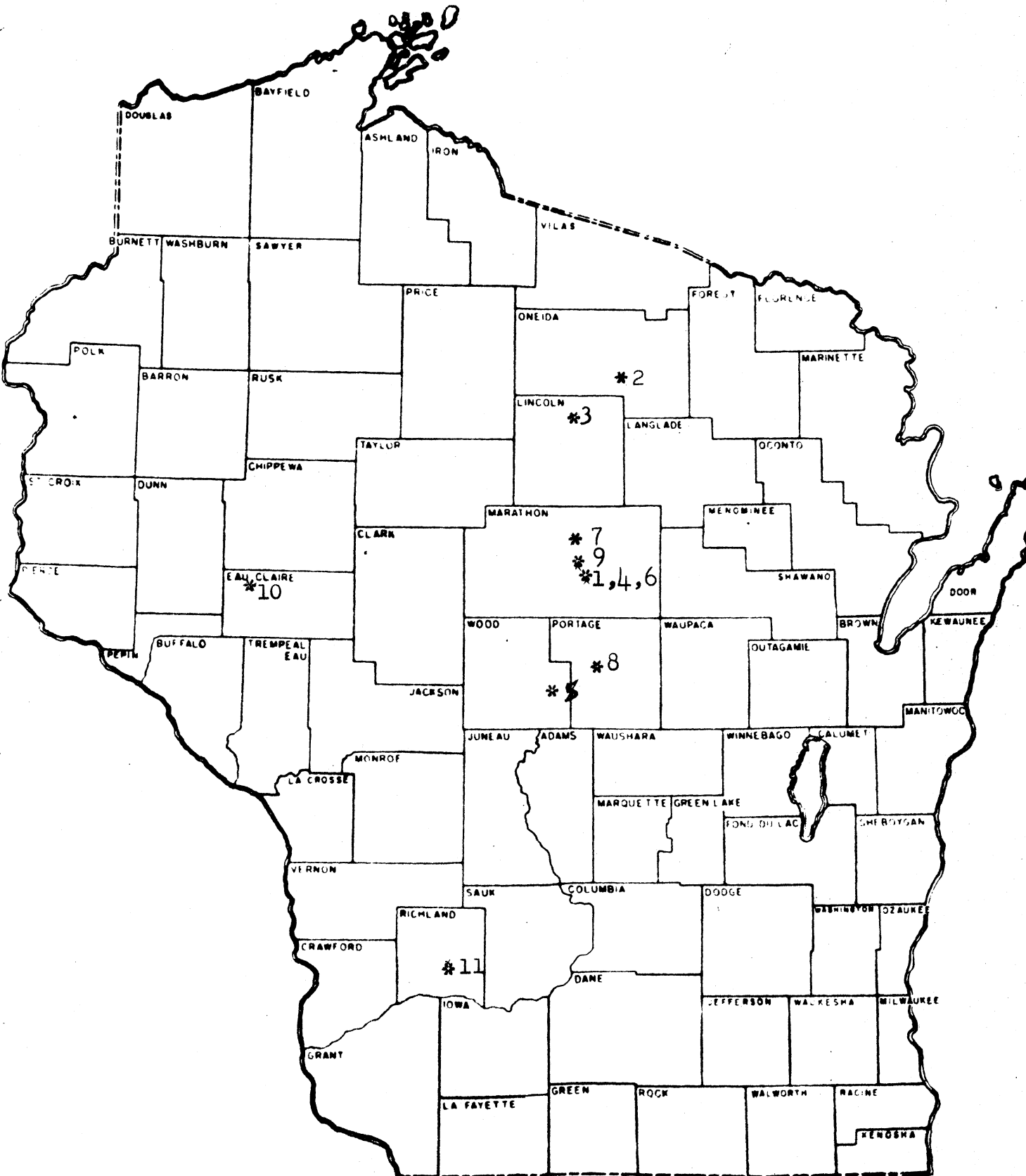
## WATER 480 WATER ANALYSIS

1. Zimpro, Inc., Rothschild
2. St. Regis Paper Co., Rhineland
3. Tomahawk Power & Pulp Co., Tomahawk
4. American Can Co., Schofield
5. Consolidated Papers, Inc., Wisconsin Rapids
6. Weyerhaeuser Co., Schofield
7. Wausau Paper Mills, Brokaw
8. City Engineer's Office, Stevens Point
9. WEX Agent, David Smith, Wausau
10. WDNR, West Central District Headquarters, Eau Claire
11. SCS Richland Center

WISCONSIN COUNTY MAP



WISCONSIN COUNTY MAP



## WATER 481 POLLUTION ECOLOGY

1. Wisconsin Valley Improvement Co., Wausau
2. Tomahawk Power & Pulp Co., Tomahawk
3. American Can Co., Schofield
4. Nekoosa Edwards Paper Co., Port Edwards
5. Consolidated Papers, Inc., Wisconsin Rapids
6. City Engineer's Office, Stevens Point
7. UW Resource Agent, Wausau, David Smith
8. WDNR, West Central District Headquarters, Eau Claire
9. SCS Richland Center
10. 535 Unit of Government
11. WDNR Employee, Shawano

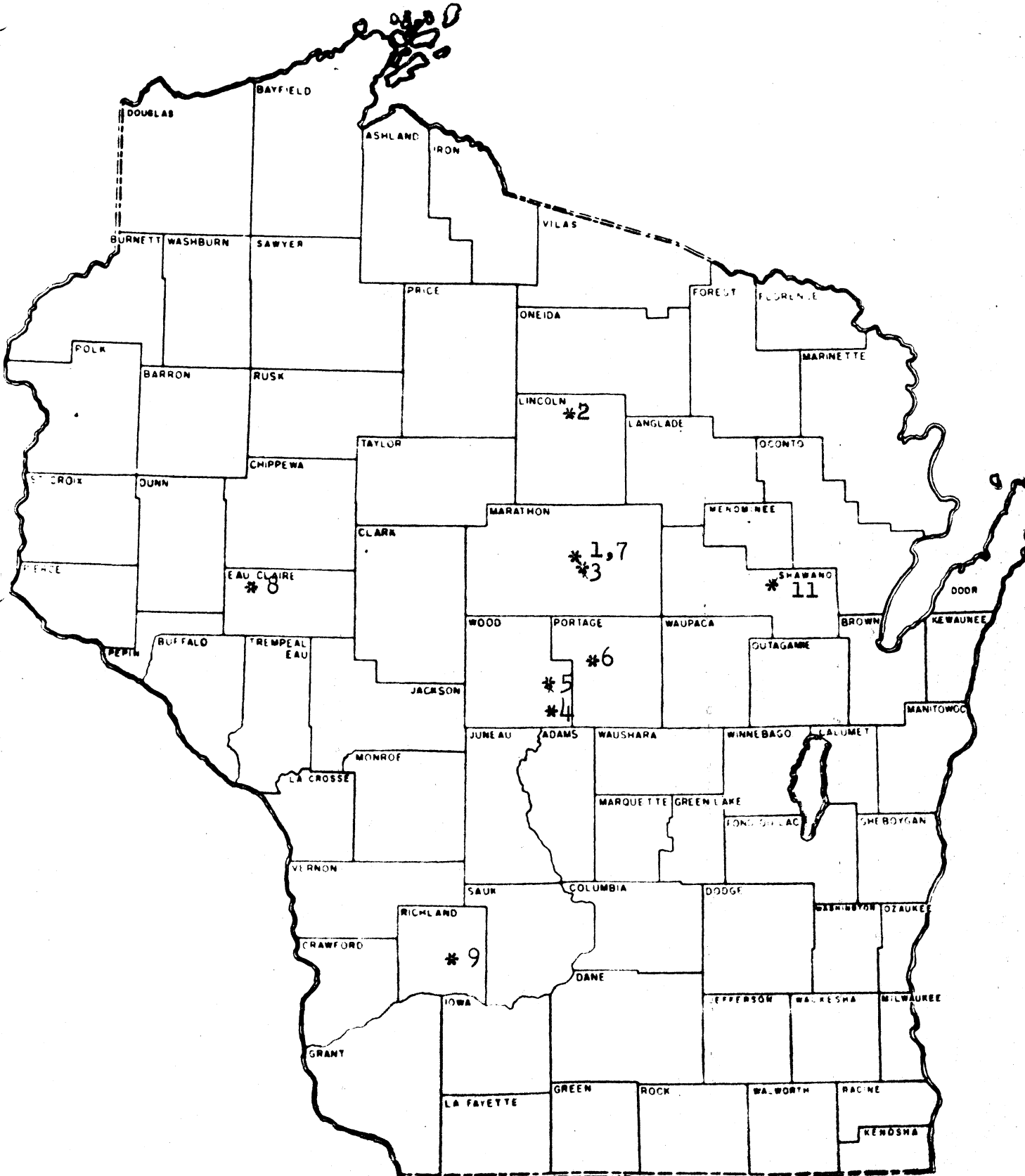
## NR 370 RESOURCE MANAGEMENT FOR ENVIRONMENTAL QUALITY

1. WDNR Employee, Joseph Keena, Wisconsin Rapids, Box 455
2. WDNR, North Central District Headquarters, Rhinelander
3. American Can Co., Schofield
4. Consolidated Papers, Inc., Wisconsin Rapids
5. Weyerhaeuser Co., Schofield
6. WDNR, West Central District Headquarters, Eau Claire
7. SCS Richland Center
8. 535 Unit of Government

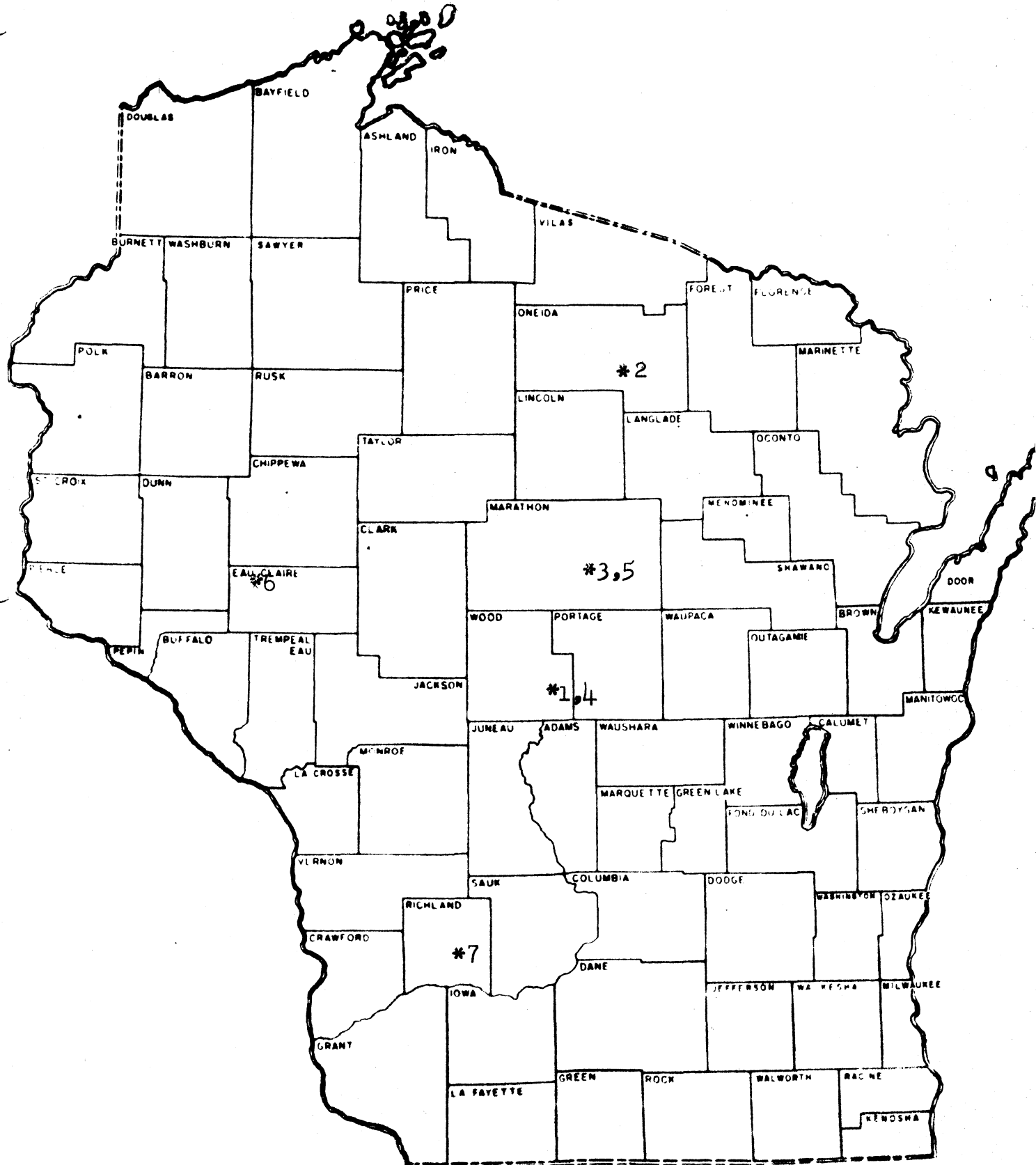
## NR 372 RESOURCE ECONOMICS

1. WDNR Employee, Joseph Keena, Wisconsin Rapids, Box 455
2. Tomahawk Power & Pulp Co., Tomahawk
3. Marathon Box Co., Wausau
4. UW Extension Agents, Lincoln County, Merrill
5. UW Extension Agent, David Smith, Wausau
6. Tigerton Lumber Co., Tigerton
7. WDNR, West Central District Headquarters, Eau Claire
8. SCS Richland Center
9. WDNR Employee, Shawano

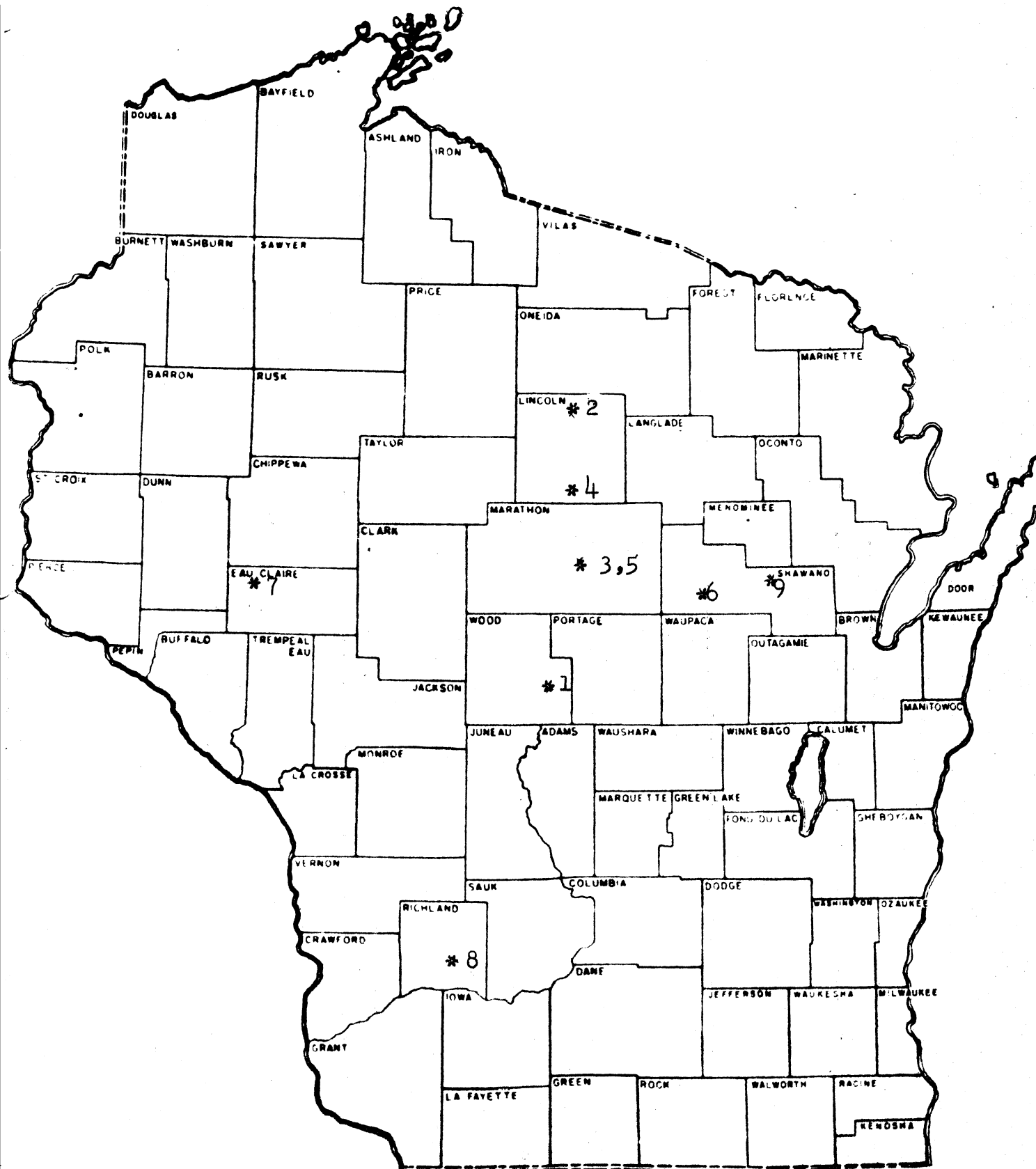
WISCONSIN COUNTY MAP



WISCONSIN COUNTY MAP



WISCONSIN COUNTY MAP



## NR 374 ENVIRONMENTAL INTERPRETATION METHODS

1. WDNR Employee, Joseph Keena, Wisconsin Rapids, Box 455
2. WDNR Employee, Robert Hess, Babcock
3. WDNR Employee, Jack Hoisington, Stevens Point
4. Portage County, Stevens Point
5. WDNR, North Central District Headquarters, Rhinelander
6. Langlade County, Antigo
7. Resource Agents, Lincoln County, Merrill
8. Resource Agent Steve Hemshrot, Waupaca
9. SCS Richland Center

## FORESTRY 321 DENDROLOGY

1. WDNR Employee, Floyd Ganther, Necedah, Box 575
2. WDNR Employee, Jeffery G. Norris, New Lisbon
3. WDNR Employee, Lloyd Dettwiler, Friendship
4. Portage County Parks, Stevens Point
5. Tomahawk Power & Pulp Co., Tomahawk
6. Nekoosa Edwards Paper Co., Port Edwards
7. Consolidated Papers, Inc., Wisconsin Rapids
8. Unidentified Company #1

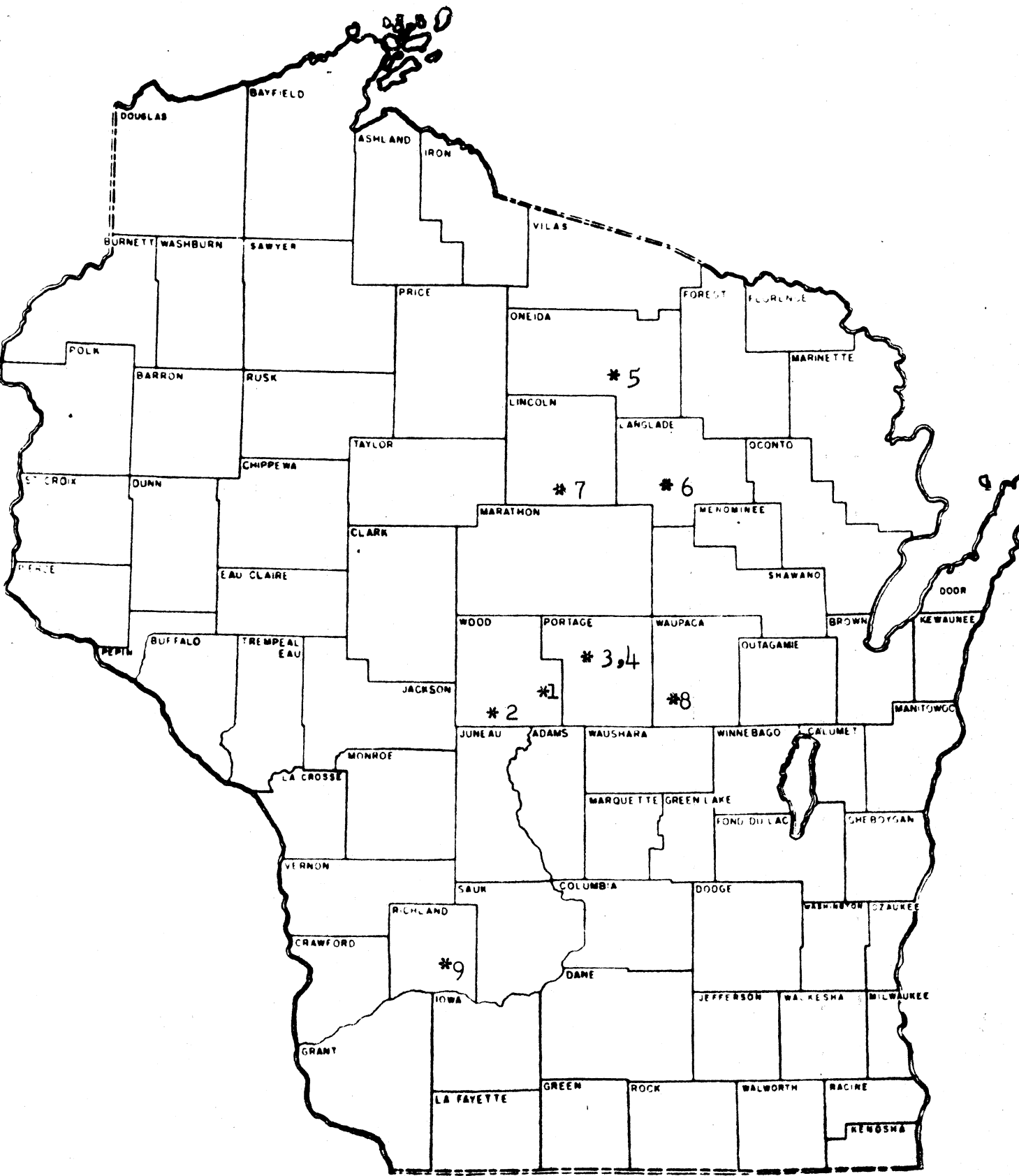
## FORESTRY 322 FOREST MENSURATION

1. WDNR Employee, Lloyd Dettwiler, Friendship
2. Owens-Illinois, Inc., Tomahawk
3. Nekoosa Edwards Paper Co., Port Edwards
4. Clark County, Neillsville
5. Tigerton Lumber Co., Tigerton
6. WDNR, West Central District Headquarters, Eau Claire
7. Unidentified Company #1

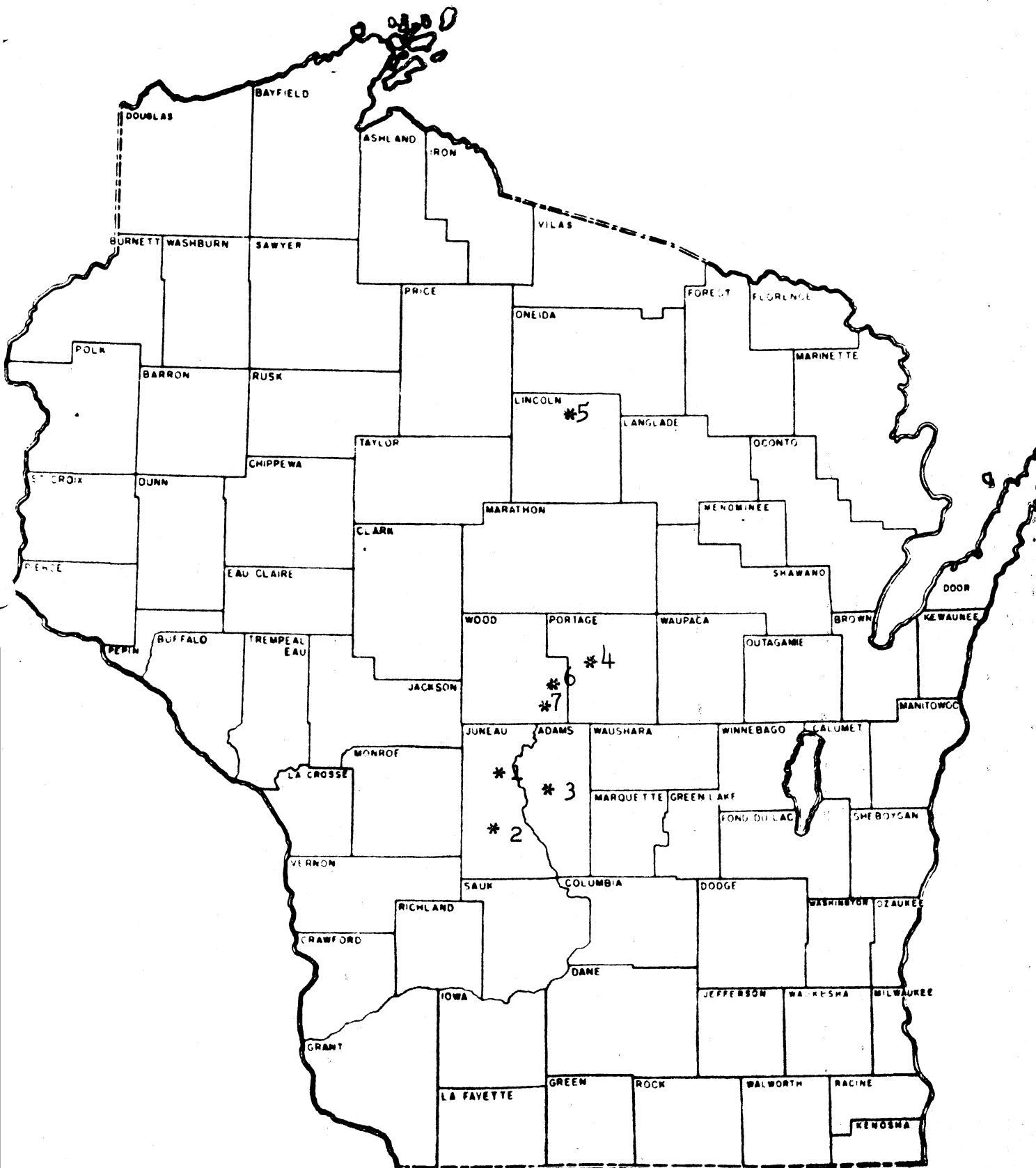
## FORESTRY 333 URBAN FORESTRY

1. WDNR Employee, Jack Hoisington, Stevens Point
2. Portage County, Stevens Point
3. Wood County, Wisconsin Rapids
4. City of Wisconsin Rapids
5. UW Extension Agents, Lincoln County, Merrill
6. WDNR Forester, Wisconsin Rapids
7. 535 Unit of Government
8. WDNR Employee, Shawano

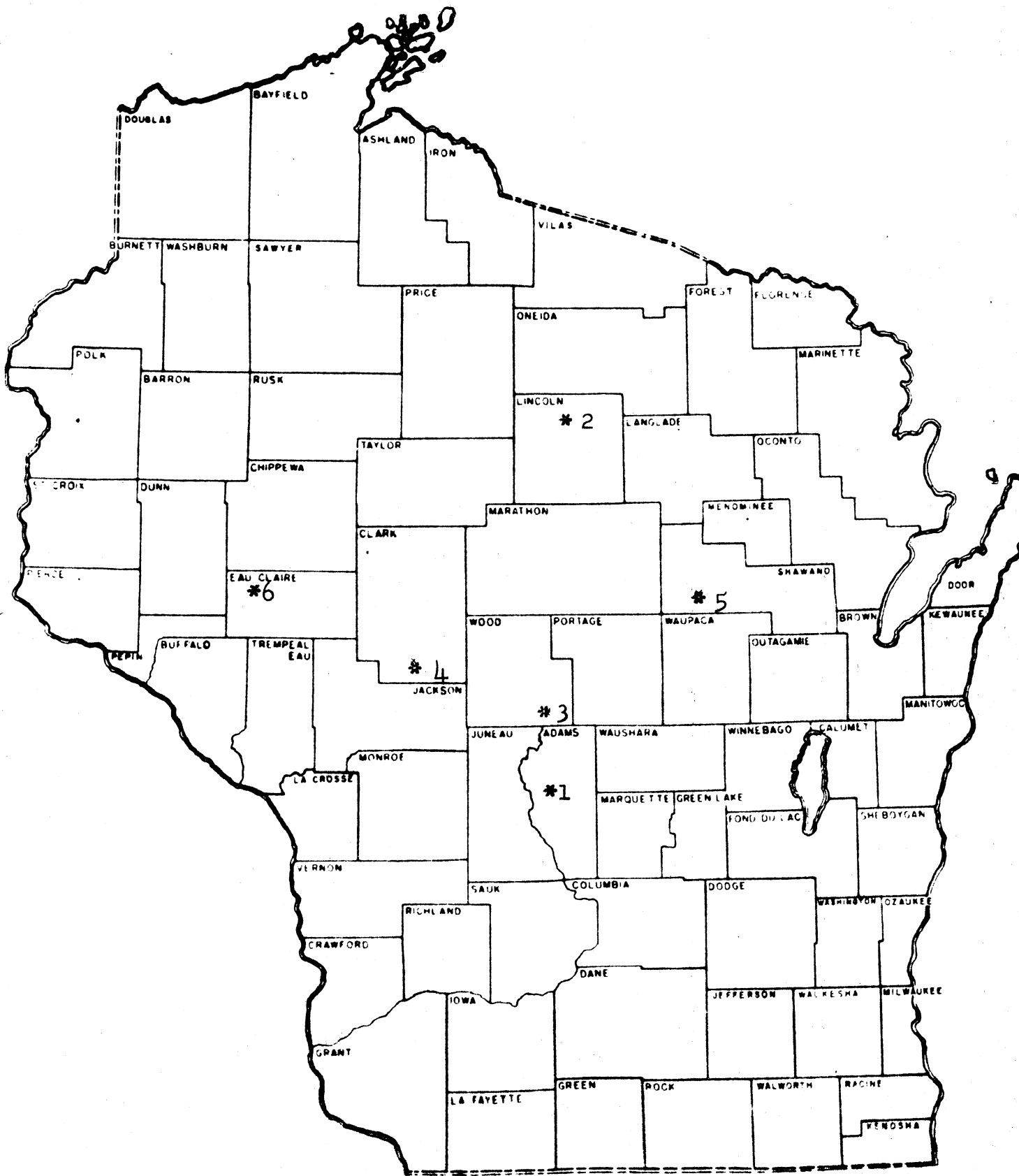
WISCONSIN COUNTY MAP



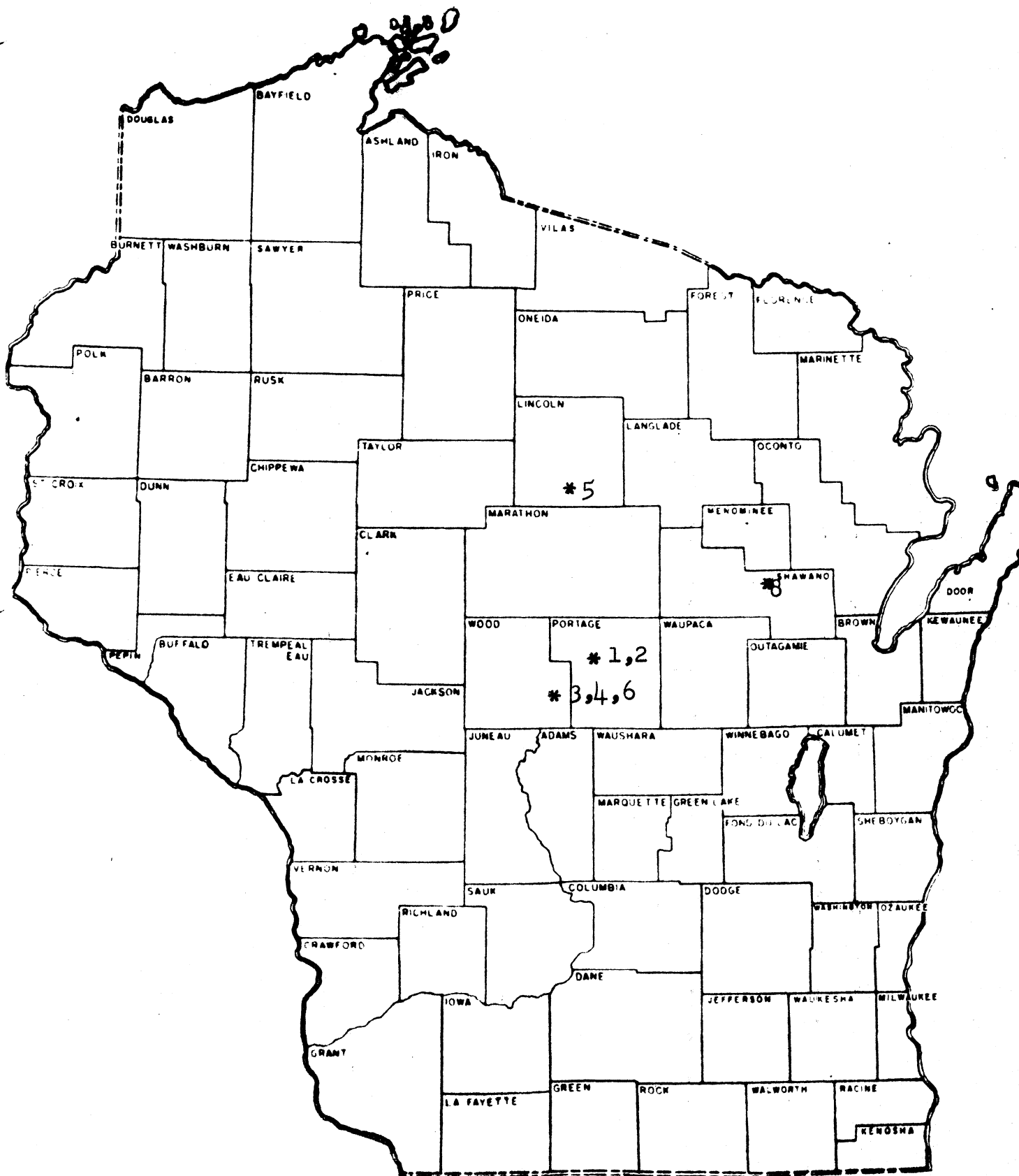
WISCONSIN COUNTY MAP



WISCONSIN COUNTY MAP



WISCONSIN COUNTY MAP



## FORESTRY 424 FOREST PATHOLOGY

1. WDNR Employee, Lawrence Jonas, Babcock, Box 156
2. WDNR Employee, Robert Hess, Babcock
3. Portage County, Stevens Point
4. Wood County, Wisconsin Rapids
5. Langlade County, Antigo
6. Unidentified Company #2

## FORESTRY 425 FOREST MANAGEMENT &amp; FINANCE

1. Owens-Illinois, Inc., Tomahawk
2. Tomahawk Power & Pulp Co., Tomahawk
3. Wausau Paper Mills, Brokaw
4. Tigerton Lumber Co., Tigerton
5. WDNR, West Central District Headquarters, Eau Claire
6. Unidentified Company #1

## FORESTRY 426 ENTOMOLOGY

1. WDNR Employee, Lloyd Dettwiler, Friendship
2. WDNR Employee, Lawrence Jonas, Babcock, Box 156
3. WDNR Employee, Robert Hess, Babcock
4. Wood County, Wisconsin Rapids
5. Langlade County, Antigo
6. Unidentified Company #1
7. WDNR Employee, Shawano

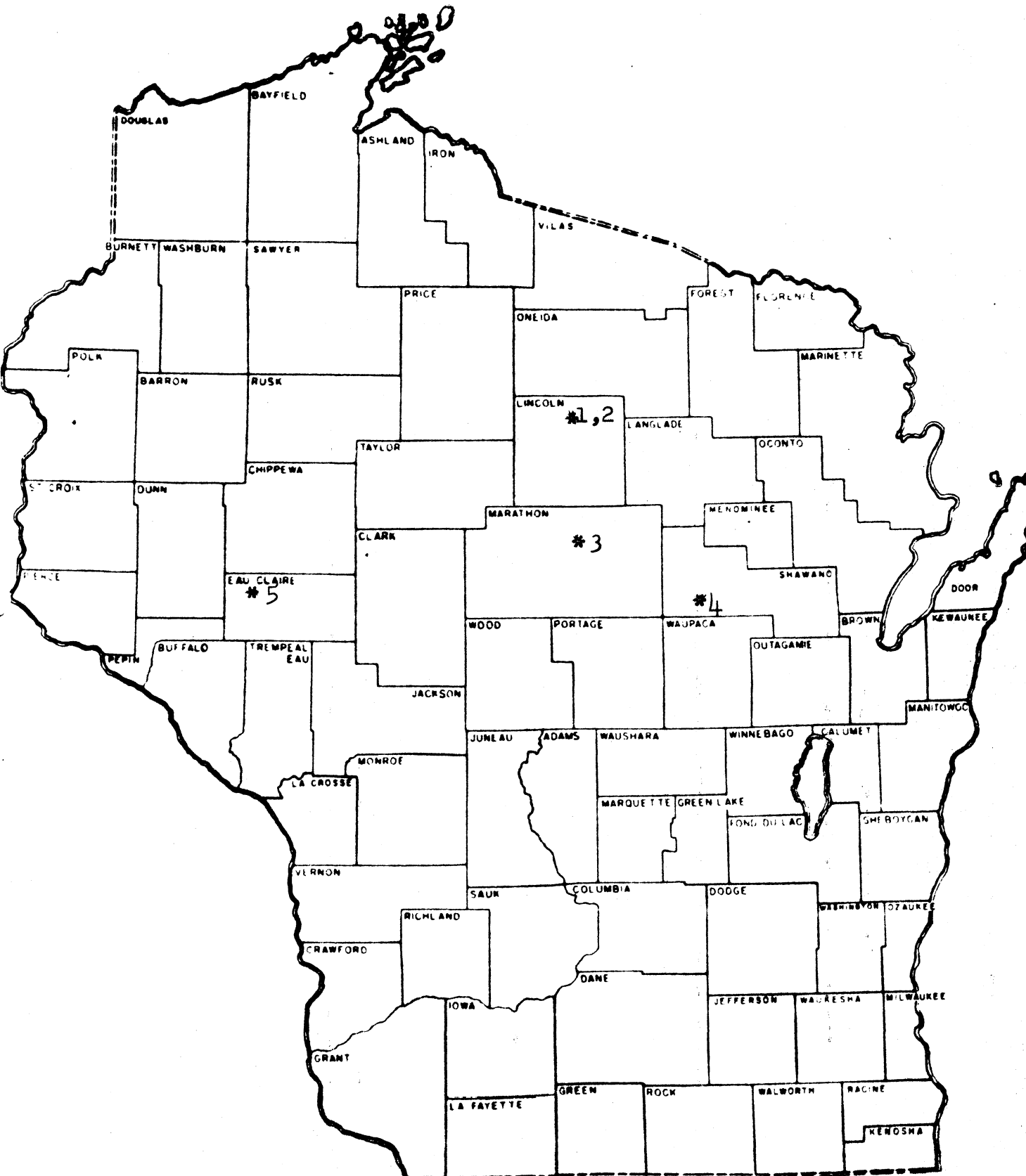
## FORESTRY 427 RECREATIONAL USE OF FORESTS AND PARKS

1. WDNR, North Central District Headquarters, Rhinelander
2. WDNR Employee, Joseph Keena, Wisconsin Rapids, Box 455
3. WDNR Employee, Floyd Ganther, Necedah, Box 575
4. WDNR Employee, Jeffery Norris, New Lisbon
5. WDNR Employee, Lloyd Dettwiler, Friendship
6. Portage County, Stevens Point
7. Langlade County, Antigo
8. WDNR, West Central District Headquarters, Eau Claire

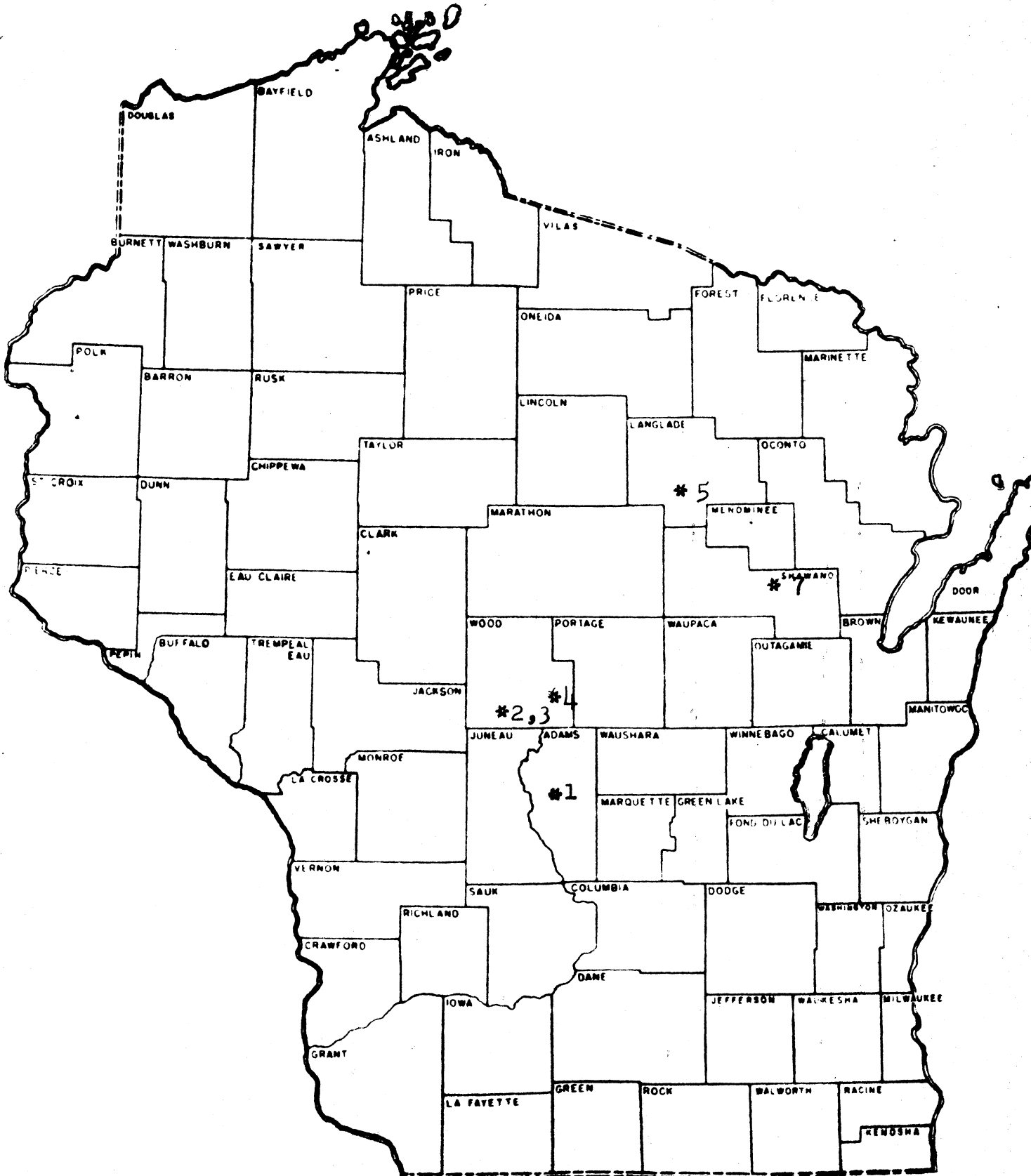
WISCONSIN COUNTY MAP



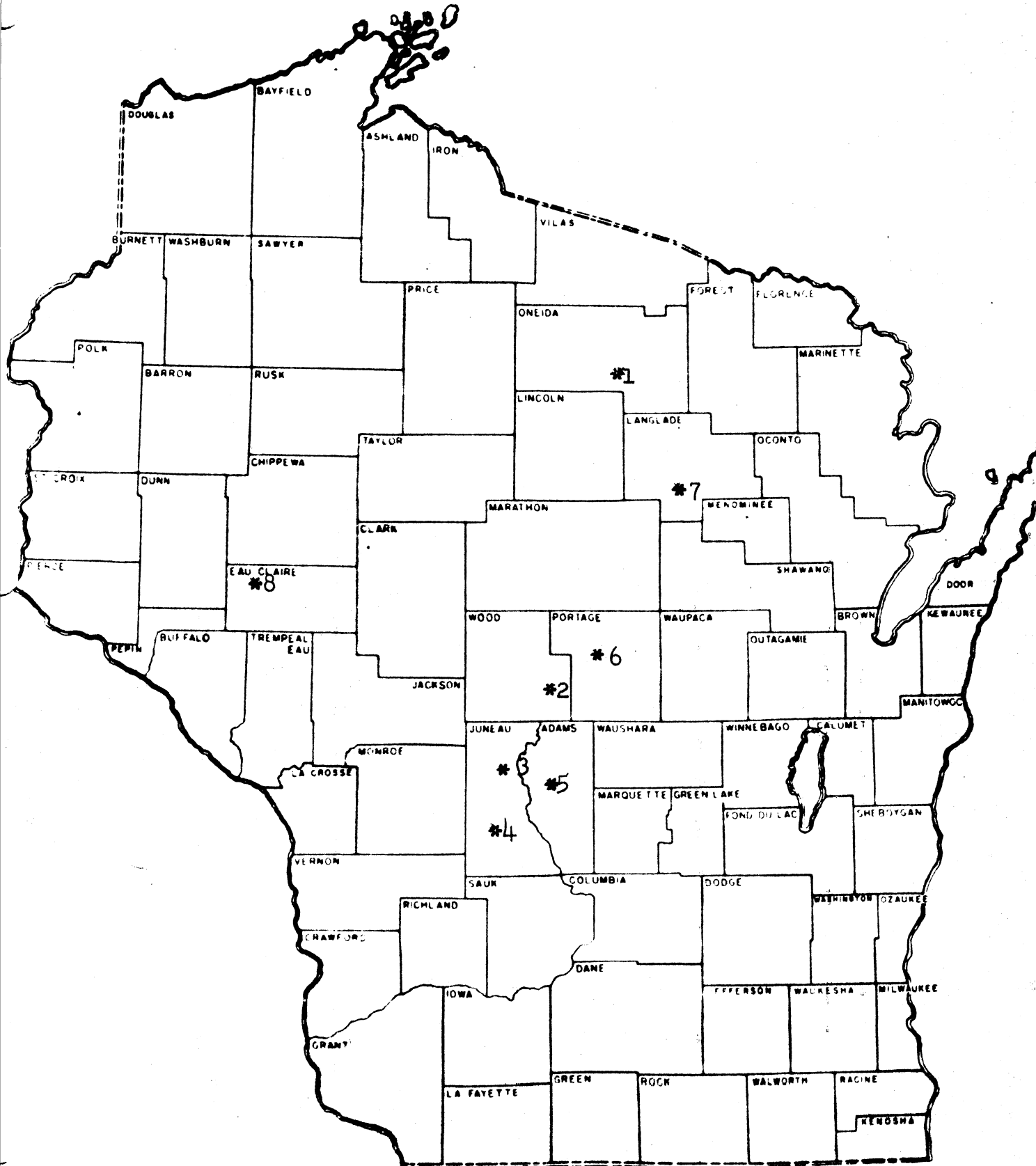
WISCONSIN COUNTY MAP



WISCONSIN COUNTY MAP



WISCONSIN COUNTY MAP



## NR 393 ENVIRONMENTAL LAW ENFORCEMENT

1. Wisconsin Valley Improvement Co., Wausau
2. WDNR Employee, Lawrence Jonas, Babcock, Box 156
3. Portage County, Stevens Point
4. WDNR, North Central District Headquarters, Rhinelander
5. Nekoosa Edwards Paper Co., Port Edwards
6. Consolidated Papers, Inc., Wisconsin Rapids
7. WDNR Forester, Wisconsin Rapids
8. Tigerton Lumber Co., Tigerton
9. SCS Richland Center
10. Unidentified Company #1

## NR 474 INTEGRATED RESOURCE MANAGEMENT

1. WDNR Employee, Joseph Haug, Babcock
2. WDNR Employee, Robert Hess, Babcock
3. Consolidated Papers, Inc., Wisconsin Rapids
4. Clark County, Neillsville
5. Tigerton Lumber Co., Tigerton
6. WDNR, West Central District Headquarters, Eau Claire
7. SCS Richland Center
8. Unidentified Company #1
9. 535 Unit of Government

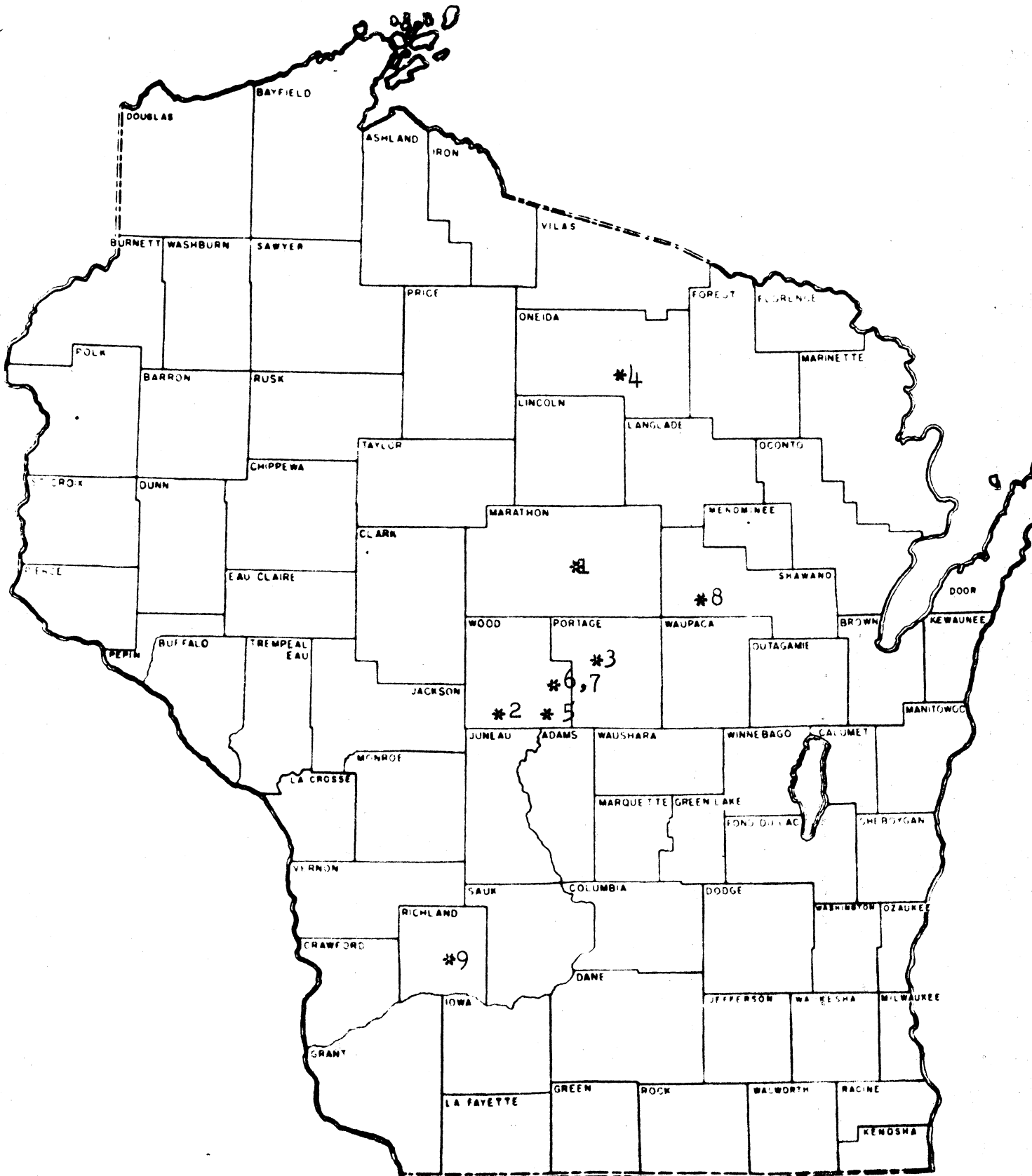
## SOILS 260 INTRODUCTION TO SOIL RESOURCES

1. Wisconsin Valley Improvement Co., Wausau
2. Wood County, Wisconsin Rapids
3. WDNR, West Central District Headquarters, Eau Claire
4. SCS Richland Center
5. 535 Unit of Government
6. WDNR Employee, Shawano

## SOILS 263 SOIL PROFILE AND DESCRIPTION WRITING

1. Wisconsin Valley Improvement Co., Wausau
2. Unidentified, Wisconsin Valley
3. SCS Richland Center
4. 535 Unit of Government
5. WDNR Employee, Shawano

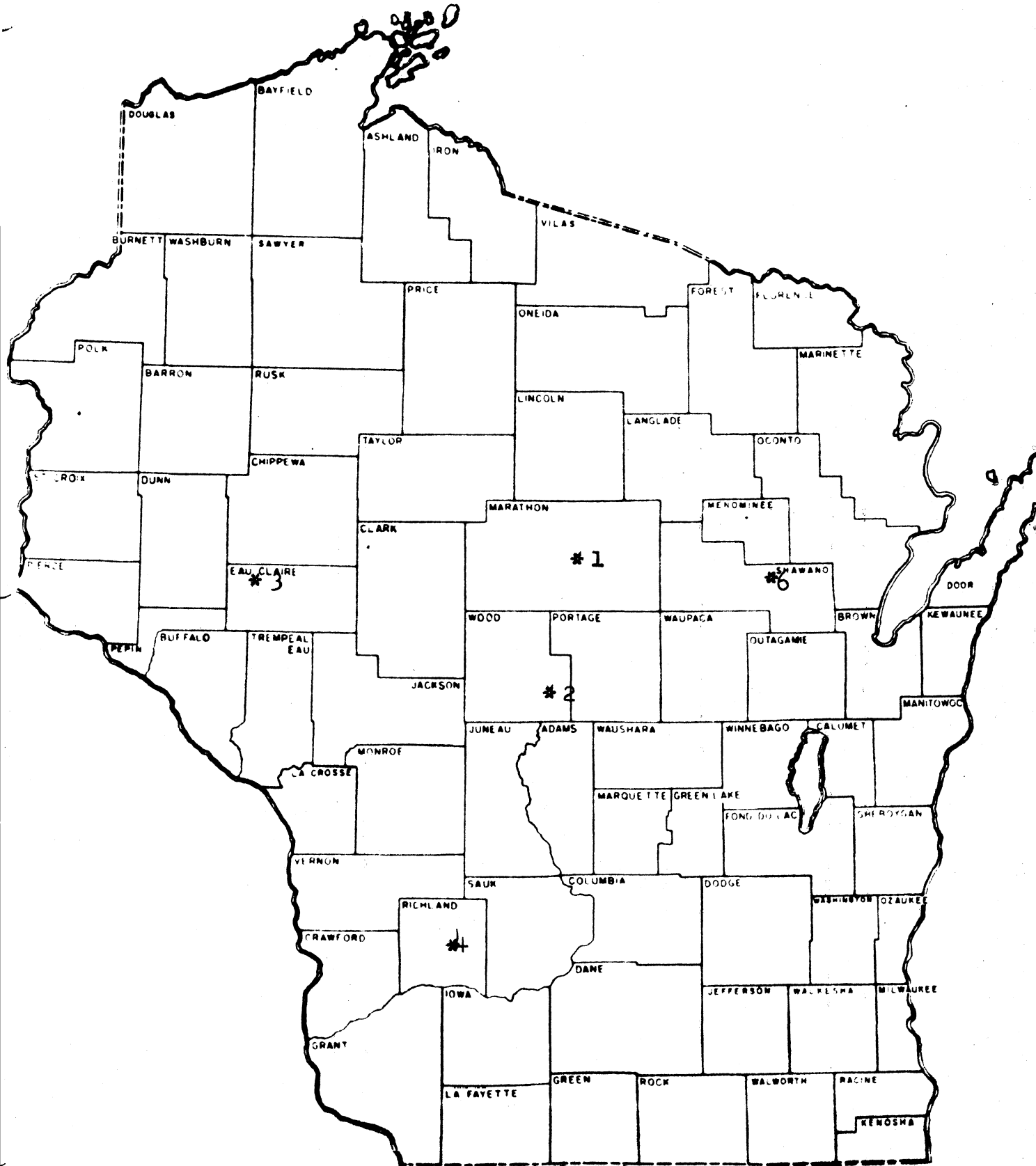
WISCONSIN COUNTY MAP



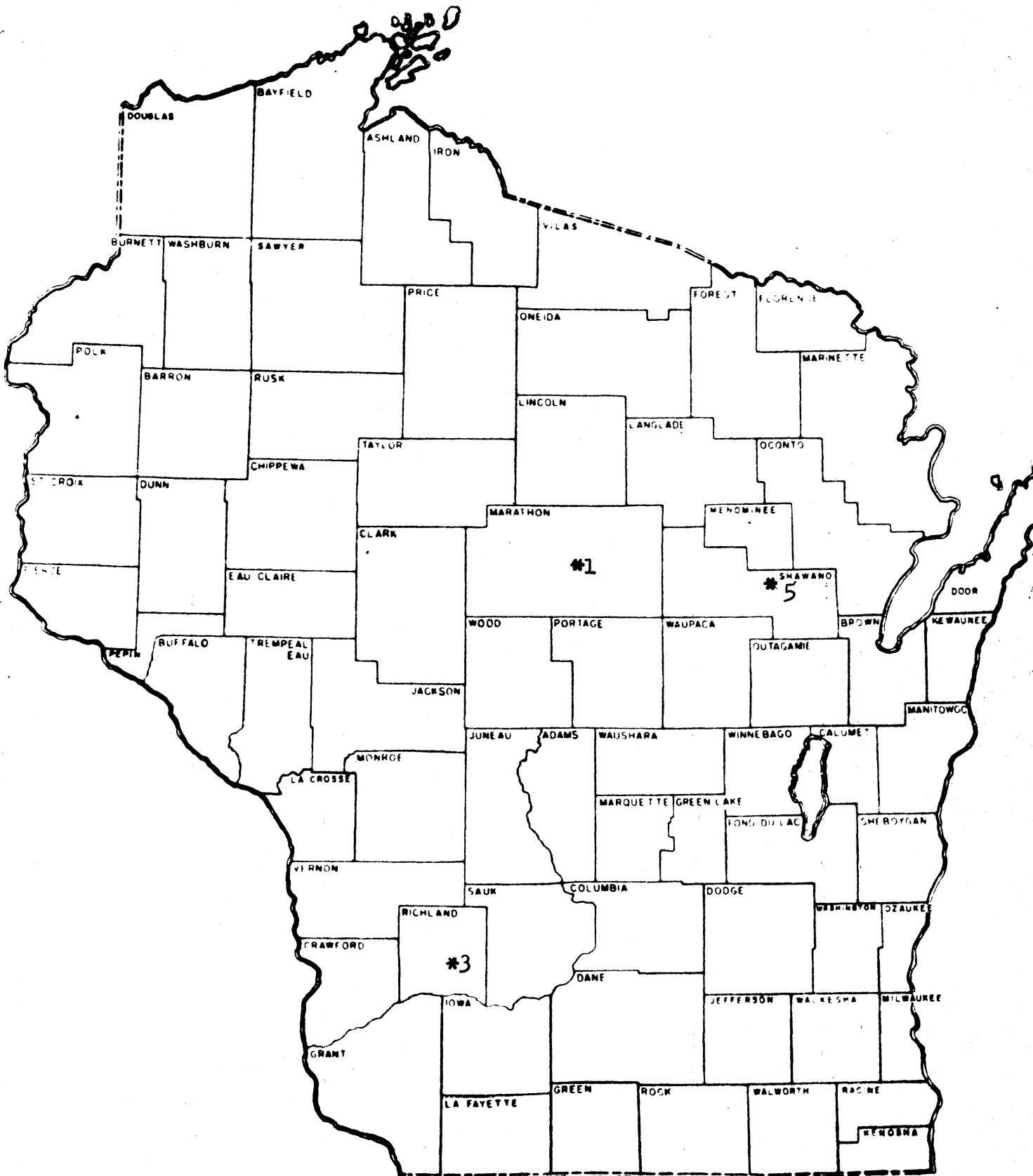
WISCONSIN COUNTY MAP



WISCONSIN COUNTY MAP



WISCONSIN COUNTY MAP



## SOILS 361 FOREST SOILS

1. Wisconsin Valley Improvement Co., Wausau
2. WDNR Employee, Jack Hoisington, Stevens Point
3. Wood County, Wisconsin Rapids
4. SCS Richland Center
5. 535 Unit of Government
6. Unidentified Company #1
7. Unidentified Company #2

## SOILS 365 INTERPRETATION FOR LAND USE PLANNING

1. WDNR, North Central District Headquarters, Rhinelander
2. Wisconsin Valley Improvement Co., Wausau
3. Unidentified, Wisconsin River Valley
4. SCS Richland Center
5. 535 Unit of Government
6. Unidentified Company #2

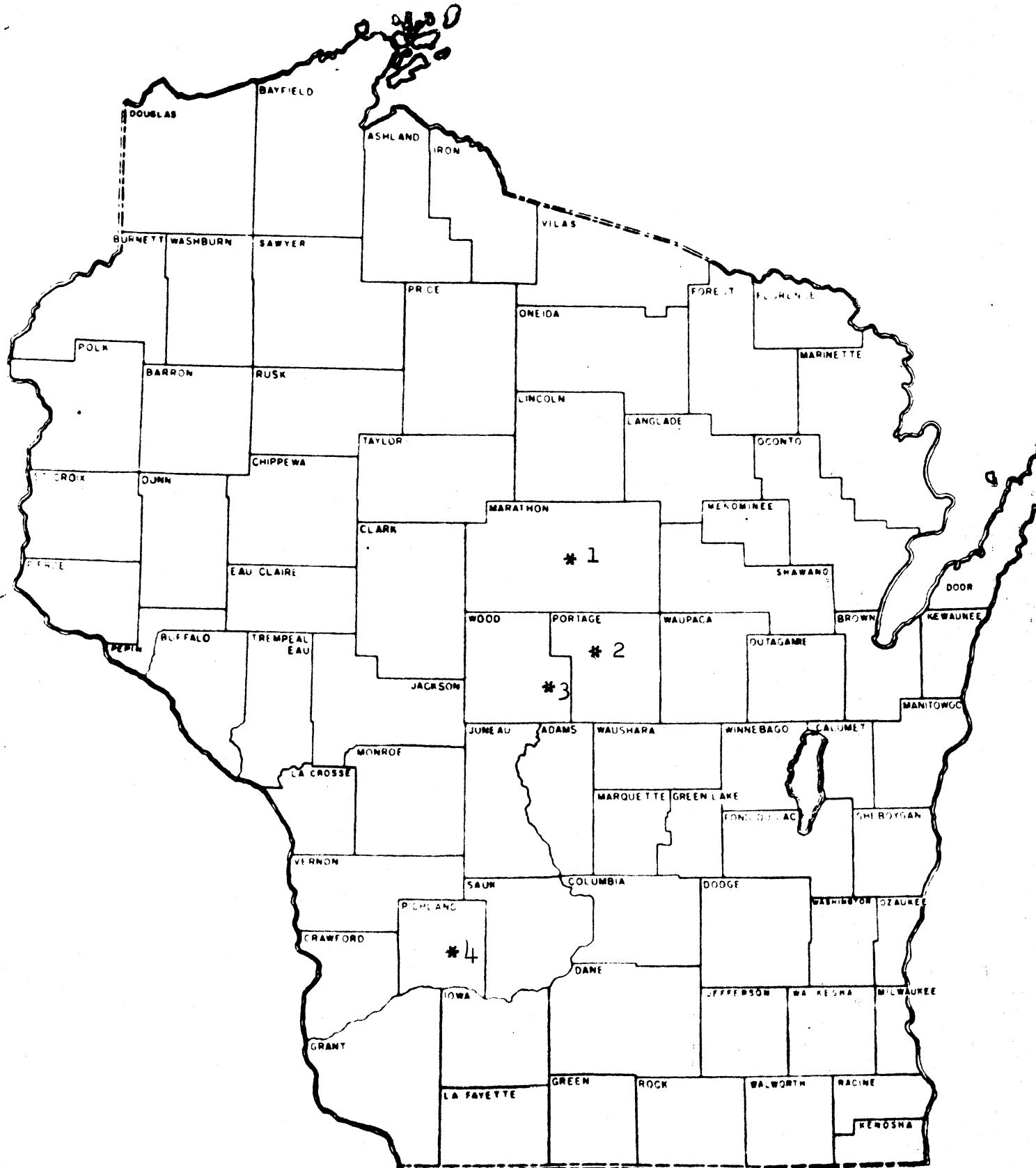
## SOILS 461 SOIL MANAGEMENT

1. Consolidated Papers, Inc., Wisconsin Rapids
2. Wausau Paper Mills, Brokaw
3. County Agricultural Agent Joe Walker, Waupaca
4. Unidentified, Wisconsin River Valley
5. SCS Richland Center
6. 535 Unit of Government
7. Unidentified Company #2

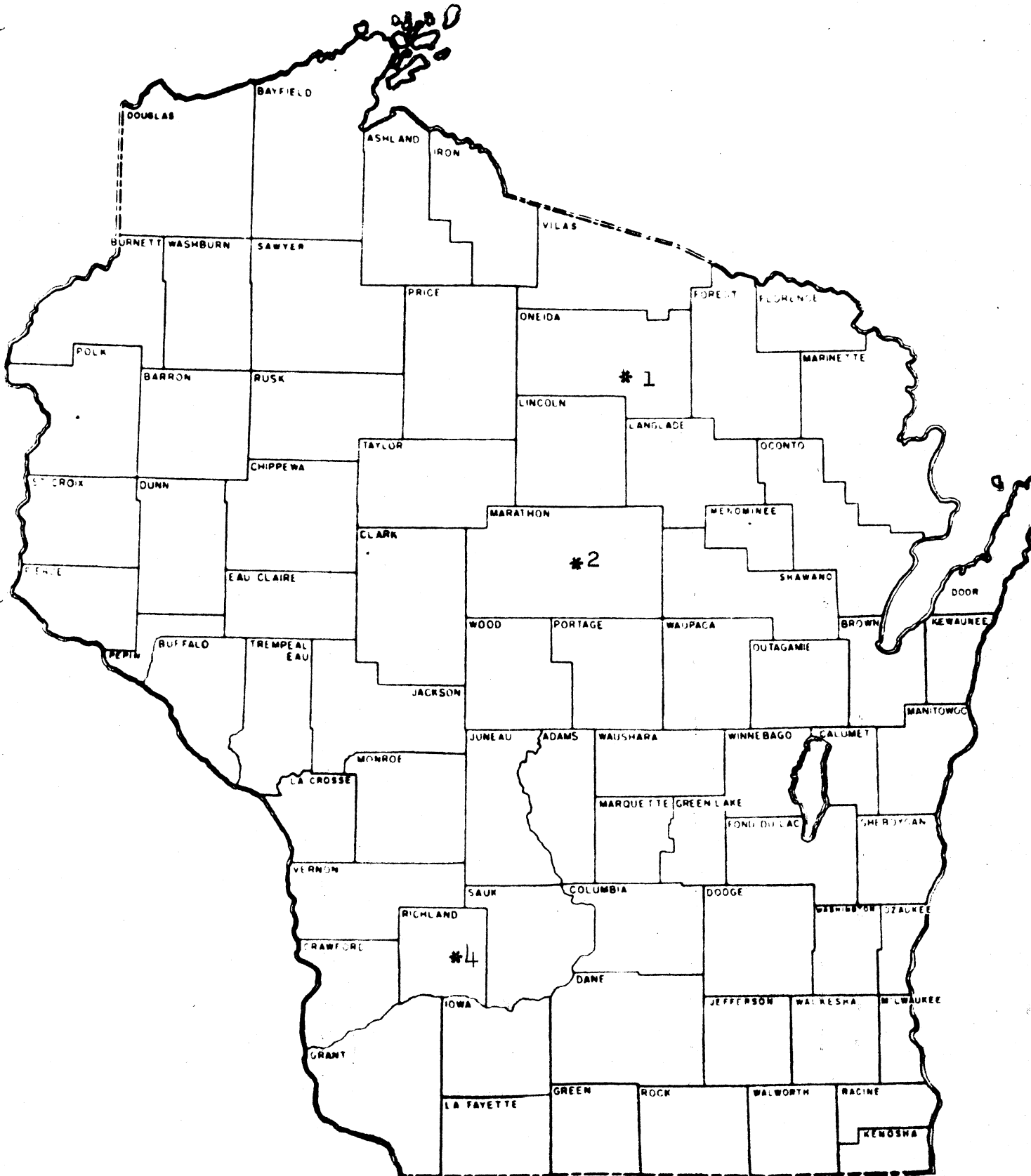
## WATER 382 WATER QUALITY MANAGEMENT

1. Wausau Paper Mills, Brokaw
2. St. Regis Paper Co., Rhinelander
3. Consolidated Papers, Inc., Wisconsin Rapids
4. Weyerhaeuser Co., Schofield
5. WDNR, West Central District Headquarters, Eau Claire
6. SCS Richland Center
7. 535 Unit of Government

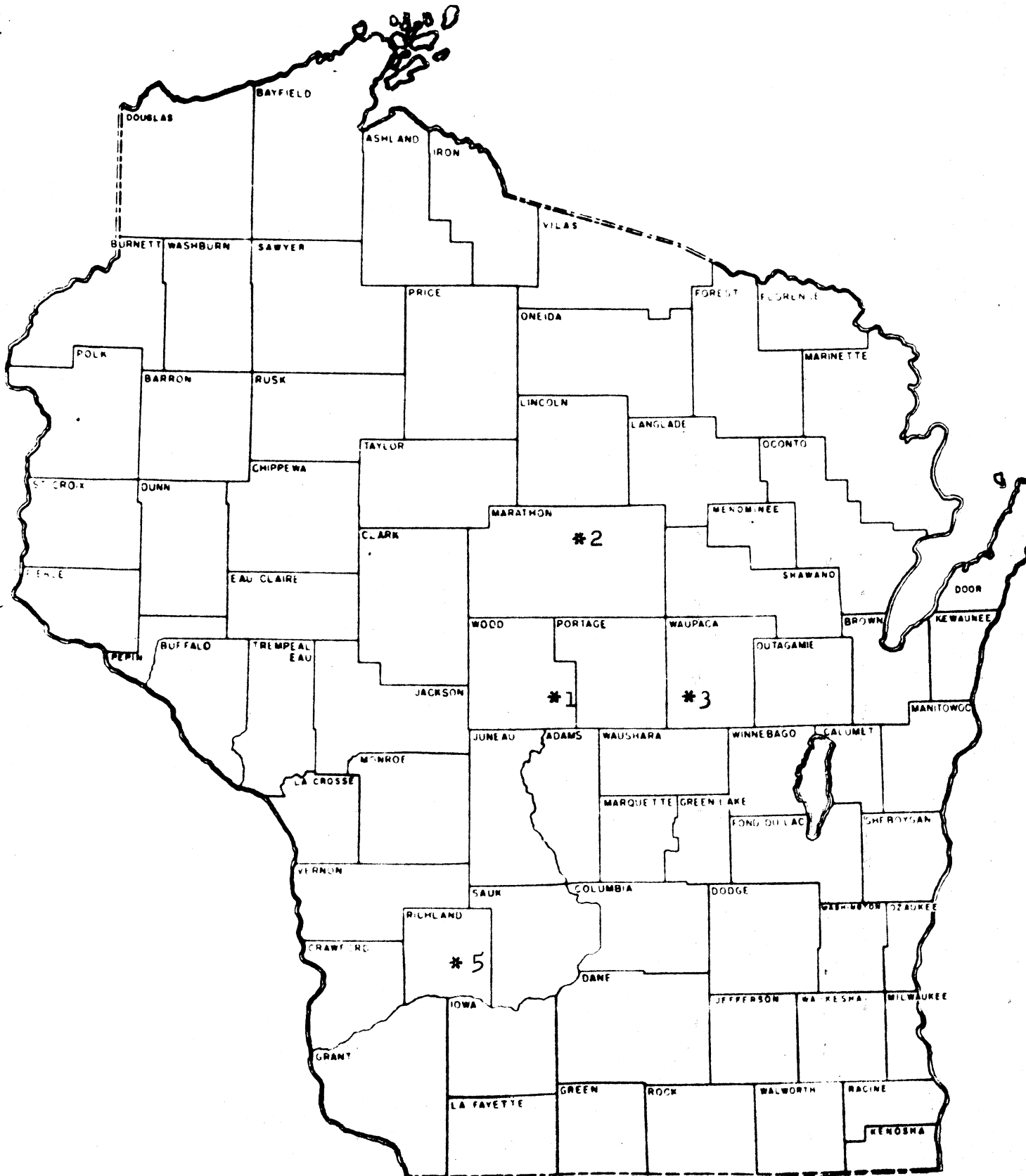
WISCONSIN COUNTY MAP



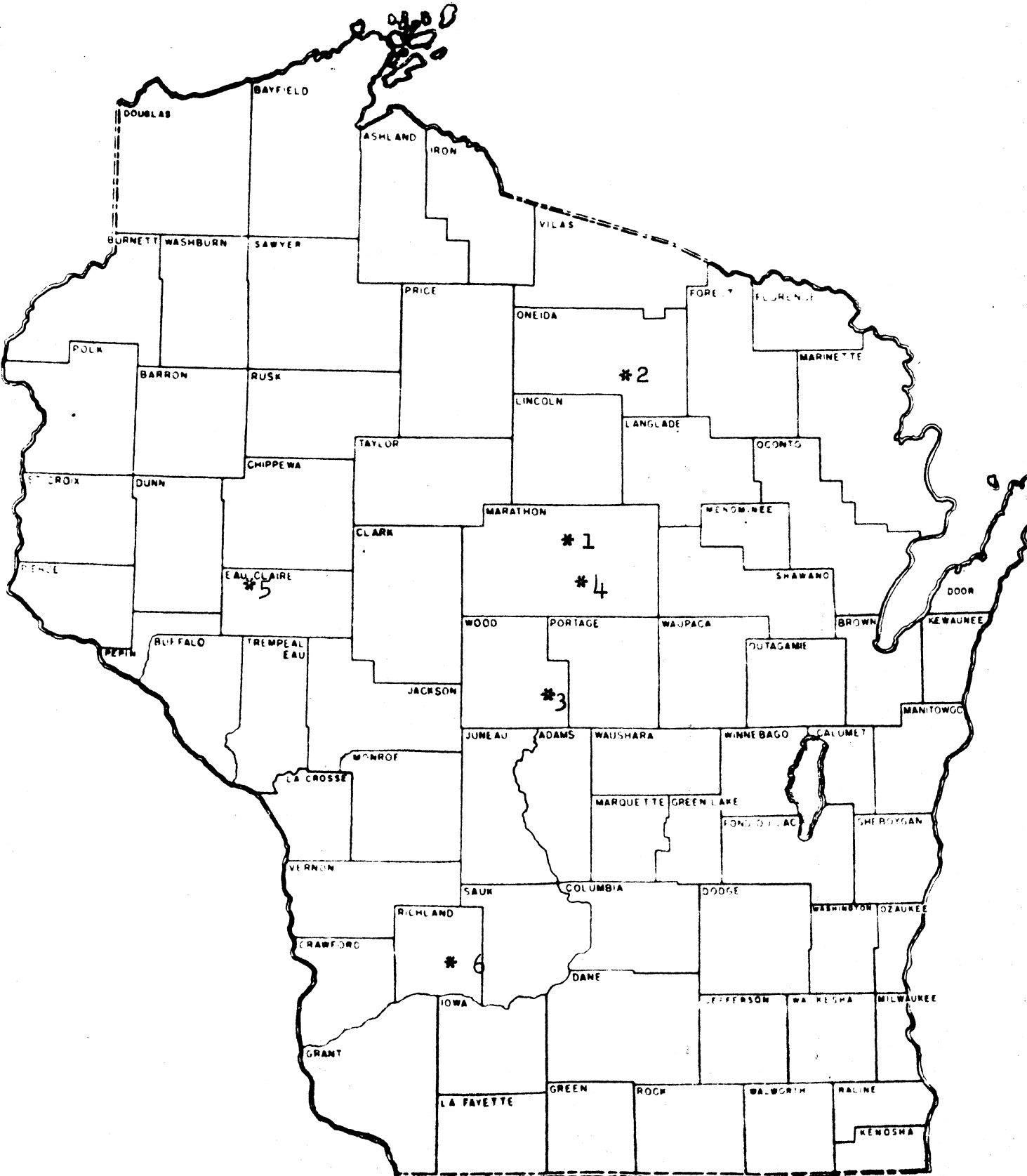
WISCONSIN COUNTY MAP



WISCONSIN COUNTY MAP



WISCONSIN COUNTY MAP



## WATER 384 HYDROLOGY

1. WDNR Employee, Joseph Keena, Wisconsin Rapids
2. WDNR, North Central District Headquarters, Rhinelander
3. Consolidated Papers, Inc., Wisconsin Rapids
4. Unidentified, Wisconsin River Valley
5. SCS Richland Center
6. 535 Unit of Government
7. WDNR Employee, Shawano

## WILDLIFE 442 LIMNOLOGICAL METHODS

1. WDNR Employee, Joseph Keena, Wisconsin Rapids, Box 455
2. Nekoosa Edwards Paper Co., Port Edwards
3. WDNR, West Central District Headquarters, Eau Claire
4. SCS Richland Center
5. WDNR Employee, Shawano

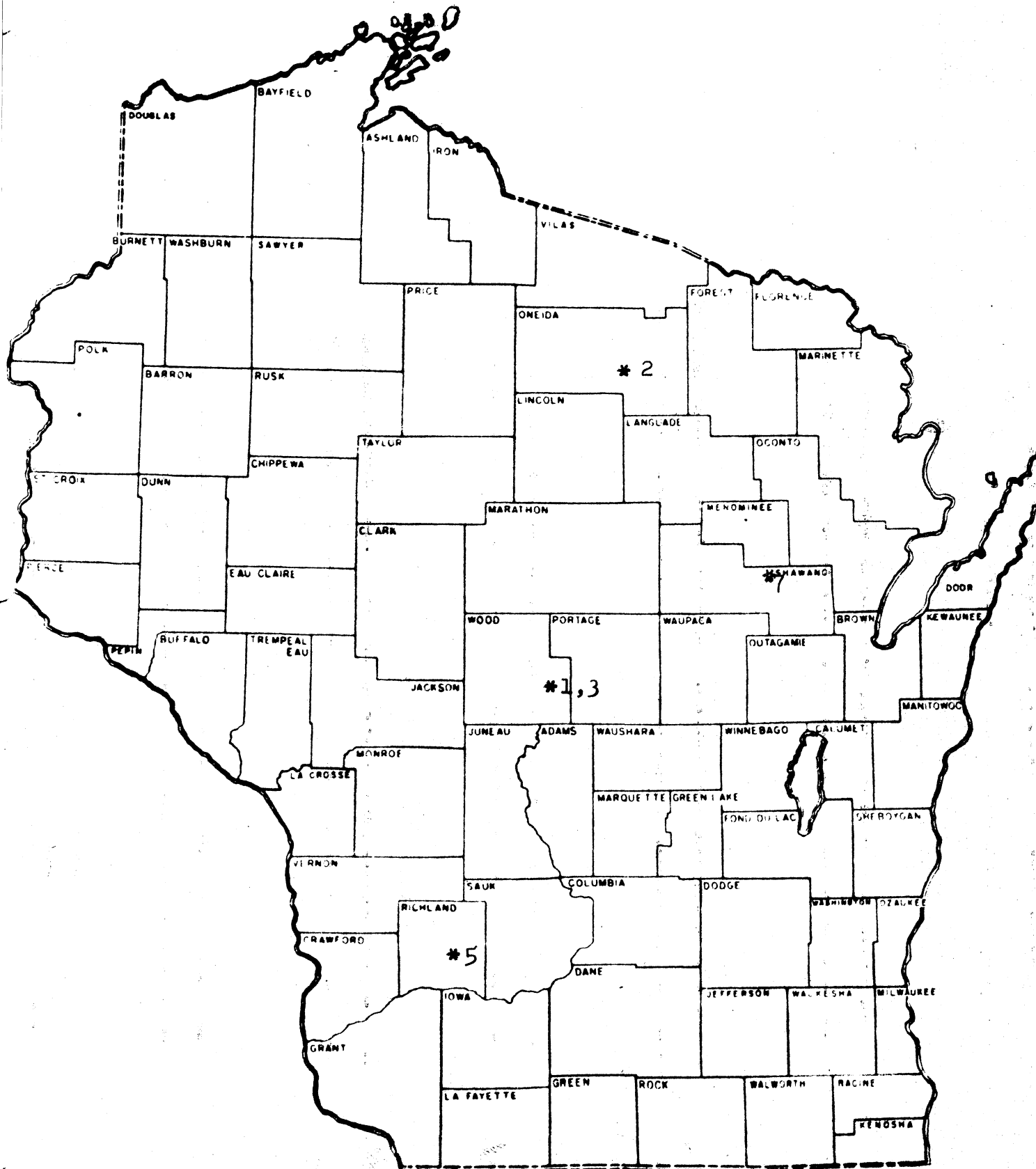
## WILDLIFE 450 WILDLIFE MANAGEMENT TECHNIQUES

1. WDNR Employee, Lawrence Jonas, Babcock, Box 156
2. WDNR Employee, Robert Hess, Babcock
3. Langlade County, Antigo
4. WDNR, West Central District Headquarters, Eau Claire
5. SCS Richland Center
6. 535 Unit of Government

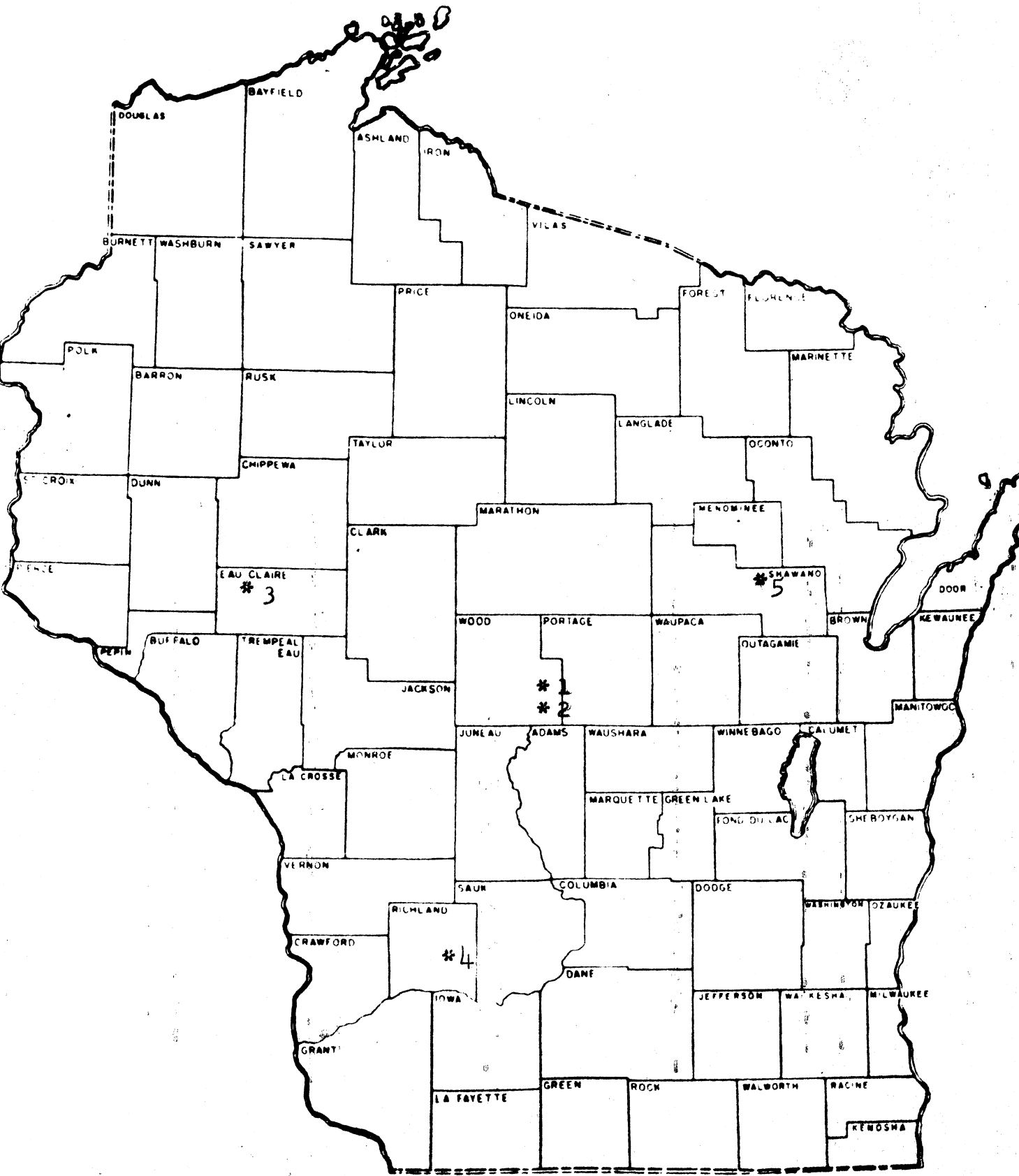
## WILDLIFE 454 NONCONSUMPTIVE USES OF WILDLIFE

1. WDNR Employee, John Kubisiak, Babcock, Box 156
2. WDNR Employee, Joseph Haug, Babcock
3. WDNR Employee, Robert Hess, Babcock
4. WDNR, West Central District Headquarters, Eau Claire
5. SCS Richland Center
6. 535 Unit of Government
7. WDNR Employee, Shawano

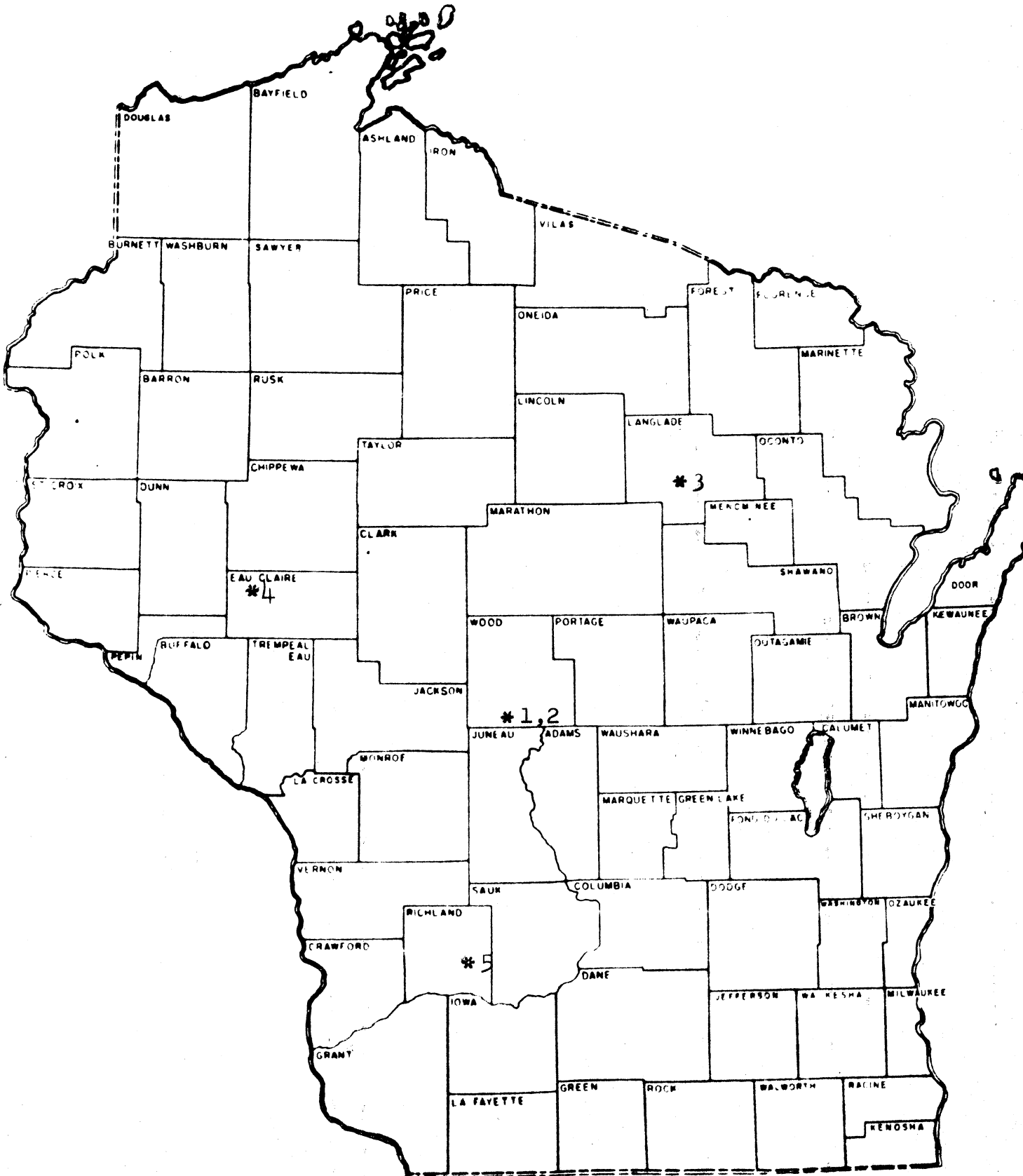
WISCONSIN COUNTY MAP



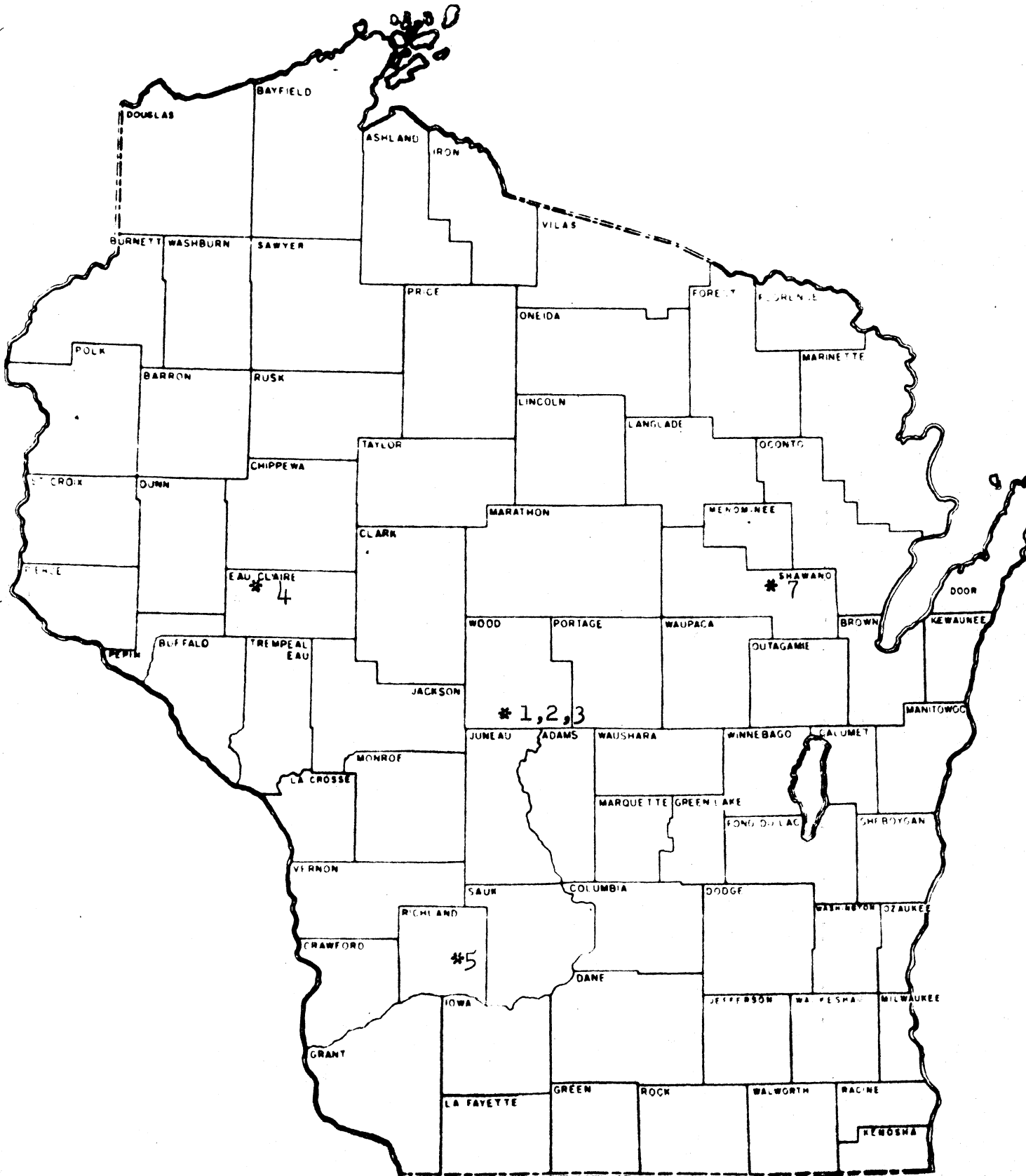
WISCONSIN COUNTY MAP



WISCONSIN COUNTY MAP



WISCONSIN COUNTY MAP



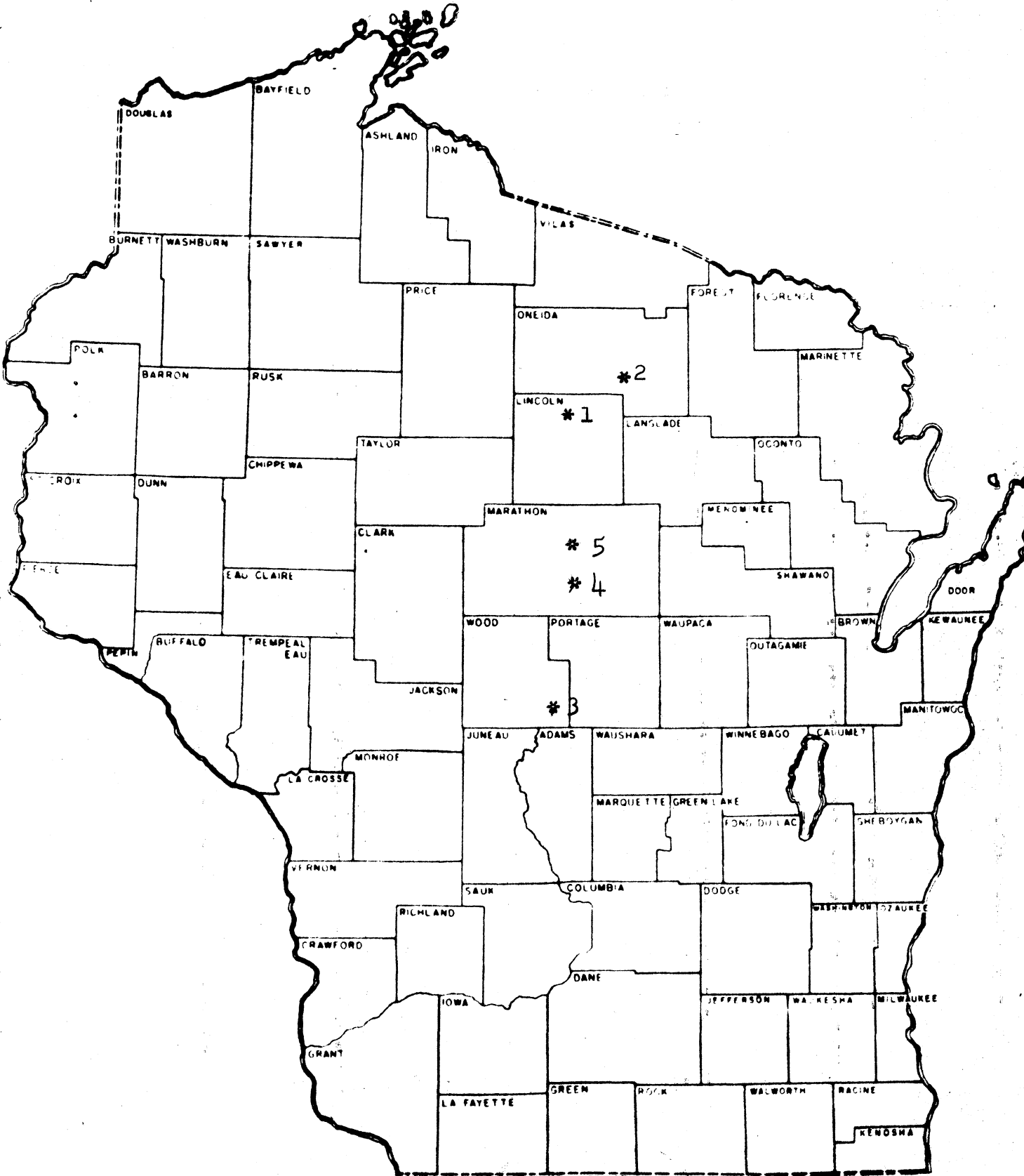
PAPER SCIENCE 101 INTRODUCTION TO PULP AND PAPER PROCESSES

1. Tomahawk Power & Pulp Co., Tomahawk
2. St. Regis Paper Co., Rhinelander
3. Nekoosa Edwards Paper Co., Port Edwards
4. Weyerhaeuser Co., Rothschild
5. Wausau Paper Mills, Brokaw

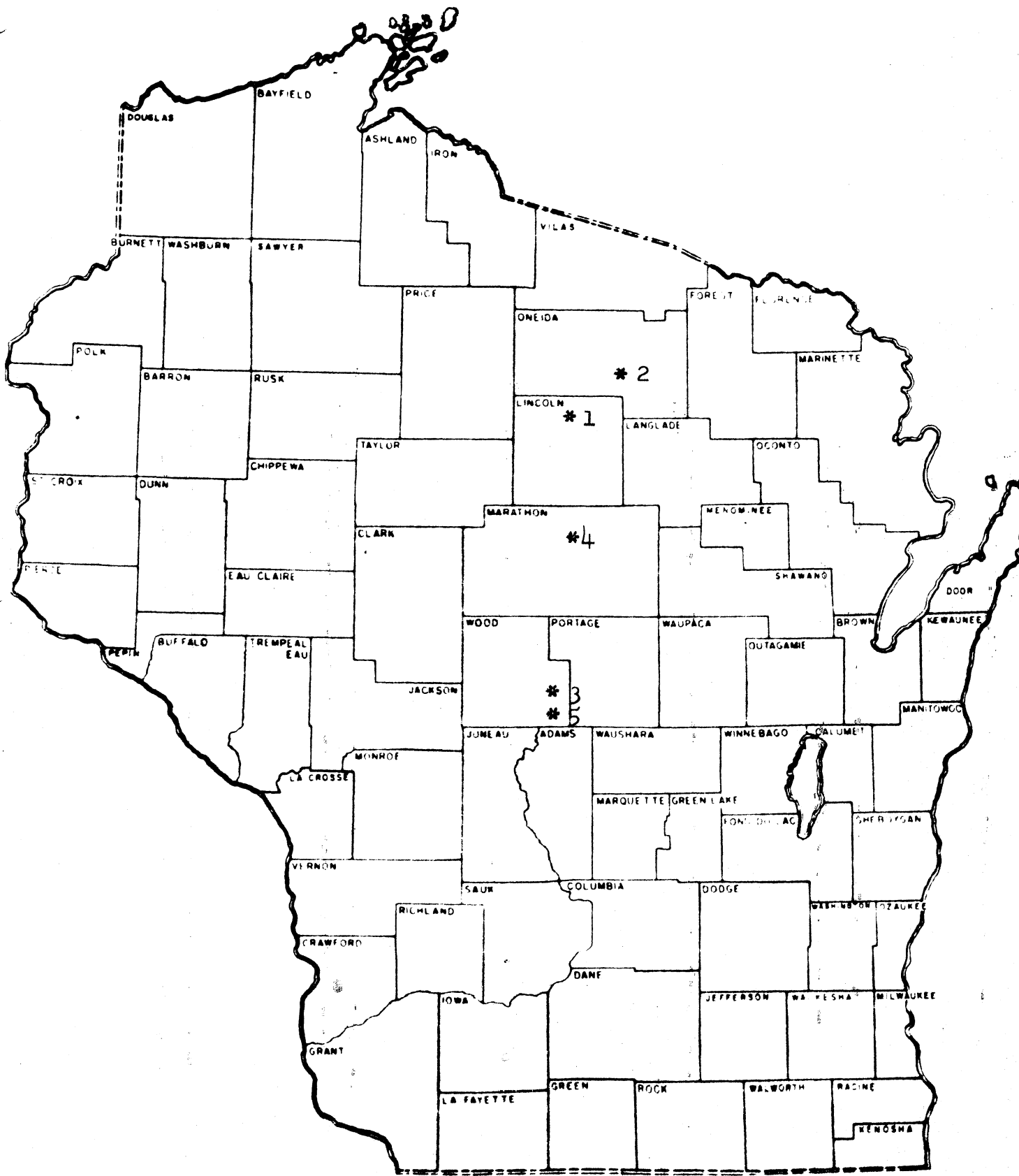
PAPER SCIENCE 210 P & P LABORATORY METHODS

1. Tomahawk Power & Pulp Co., Tomahawk
2. St. Regis Paper Co., Rhinelander
3. Consolidated Papers, Inc., Wisconsin Rapids
4. Wausau Paper Mills, Brokaw
5. Nekoosa Edwards Paper Co., Port Edwards

WISCONSIN COUNTY MAP



WISCONSIN COUNTY MAP



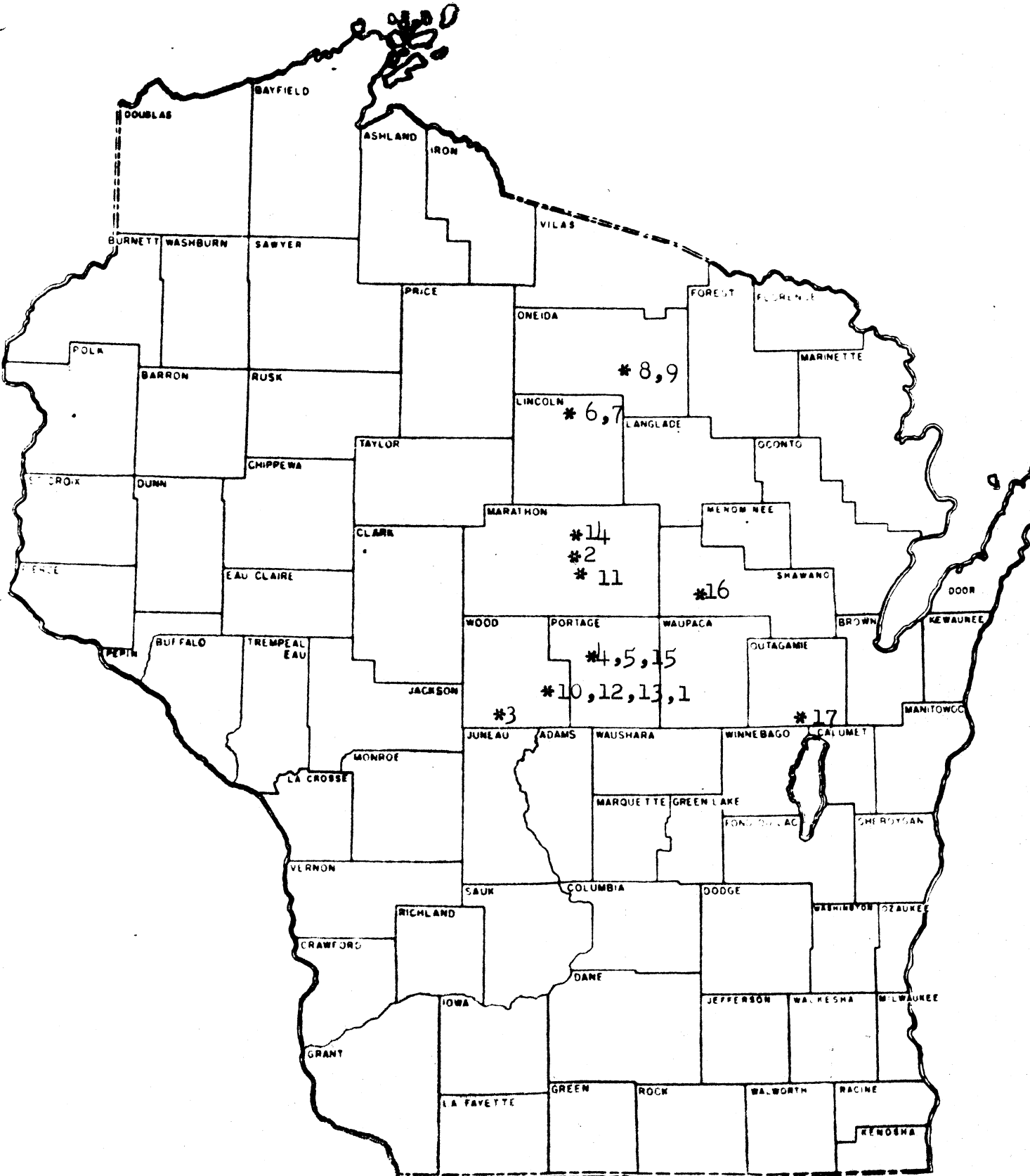
## BUSINESS MANAGEMENT

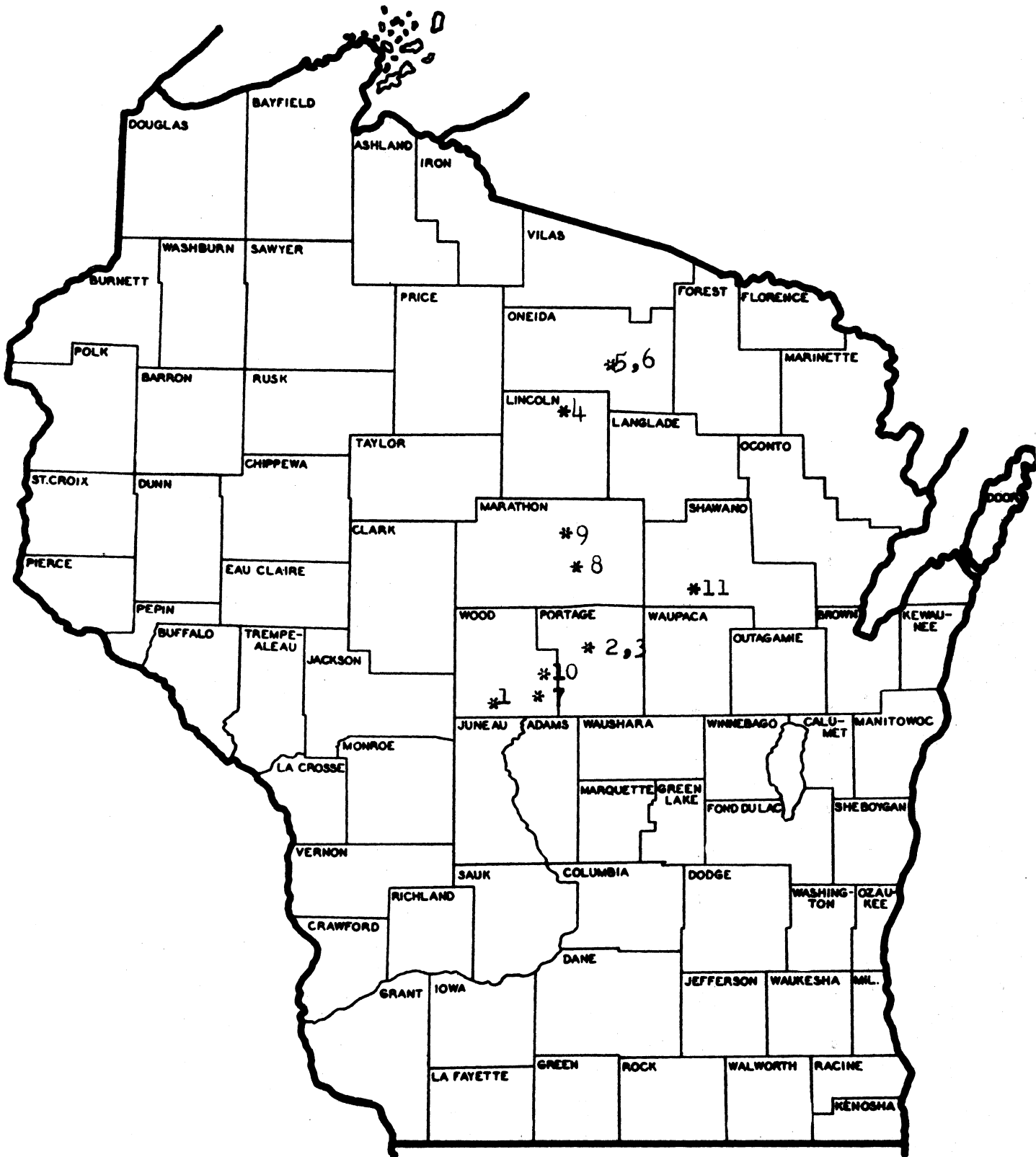
1. WDNR Employee, Joseph Keena, Wisconsin Rapids, Box 455
2. Wisconsin Valley Improvement Co., Wausau
3. WDNR Employee, Robert Hess, Babcock
4. WDNR Employee, Jack Hoisington, Stevens Point
5. Portage County, Stevens Point
6. Owens-Illinois, Inc., Tomahawk
7. Tomahawk Power & Pulp Co., Tomahawk
8. St. Regis Paper Co., Rhinelander
9. WDNR, North Central District Headquarters, Rhinelander
10. Wood County, Wisconsin Rapids
11. American Can Co., Rothschild
12. City of Wisconsin Rapids
13. Consolidated Papers, Inc., Wisconsin Rapids
14. Wausau Paper Mills, Brokaw
15. City Engineer's Office, Stevens Point
16. Tigerton Lumber Co., Tigerton
17. SCS Appleton

## ACCOUNTING FOR NON-ACCOUNTANTS

1. WDNR Employee, Robert Hess, Babcock
2. WDNR Employee, Jack Hoisington, Stevens Point
3. Portage County, Stevens Point
4. Tomahawk Power & Pulp Co., Tomahawk
5. St. Regis Paper Co., Rhinelander
6. WDNR, North Central District Headquarters, Rhinelander
7. Nekoosa Edwards Paper Co., Port Edwards
8. Weyerhaeuser Co., Rothschild
9. Wausau Paper Mills, Brokaw
10. WDNR Forester, Wisconsin Rapids
11. Tigerton Lumber Co., Tigerton

WISCONSIN COUNTY MAP



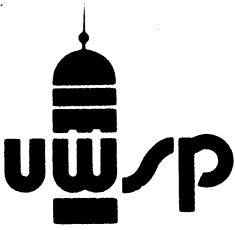


PERSONNEL MANAGEMENT

1. WDNR Employee, Joseph Haug, Babcock
2. City of Wisconsin Rapids
3. Mosinee Paper Mills, Inc., Mosinee
4. Marathon County/City of Wausau
5. Weyerhaeuser Co., Rothschild
6. SCS Appleton



SURVEY PACKET MATERIALS



university of wisconsin / stevens point • stevens point, wisconsin 54481

November 19, 1975

Personnel Manager  
Wausau Paper Mills  
Brokaw, Wisconsin 54417

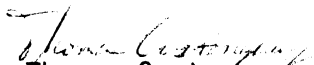
Dear Sir:

The College of Natural Resources of the University of Wisconsin at Stevens Point is presently in the planning phase of expanding its continuing education program. The objective of this program is to provide extensive or intensive training to personnel working in industries or agencies directly concerned with natural resources, i.e., pulp and paper engineering, forestry, soils, water, and wildlife.

In order to properly develop this program a survey is being conducted to determine if there is a demand for such courses and which courses are most desired. Enclosed is a list of courses currently offered by the College of Natural Resources at UW-SP. These courses are not necessarily the only courses that would be available in a continuing education program. Courses and course material can be modified to fit expressed needs. Also enclosed is a questionnaire that we would like you to give thoughtful attention.

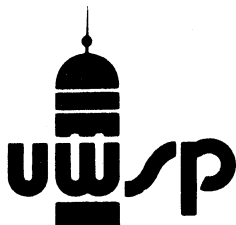
I would appreciate being able to discuss this program and your response to the questionnaire with you or knowledgeable representatives at some time in the future. I will call to arrange an appointment.

Sincerely,

  
Thomas Castonguay  
Survey Coordinator

TC/cr

Enclosures



April 5, 1976

Personnel Manager  
Little Rapids Pulp Company  
2273 Larson Road  
Green Bay, Wisconsin 54303

Dear Sir:

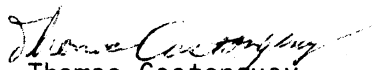
The College of Natural Resources of the University of Wisconsin at Stevens Point is presently in the planning phase of expanding its continuing education program. The objective of this program is to provide extensive or intensive training to personnel working in industries or agencies directly concerned with natural resources, i.e., pulp and paper engineering, forestry soils, water, and wildlife.

In order to properly develop this program, a survey is being conducted to determine if there is a demand for such courses and which courses are most desired. Enclosed is a list of courses currently offered by the College of Natural Resources at UW-SP. These courses are not necessarily the only courses that would be available in a continuing education program. Courses and course material can be modified to fit expressed needs. Also enclosed is a questionnaire that we would like you to fill in and return in the envelope provided.

Please let us know any questions or comments you have. Any information you give us will be helpful in the development of this program.

Thank you for your time and consideration.

Sincerely,

  
Thomas Castonguay  
Survey Coordinator

Enclosures

**UW-STEVENS POINT COLLEGE OF NATURAL RESOURCES  
CONTINUING EDUCATION SURVEY QUESTIONNAIRE**

1. Would you be interested in extended education services offered by UW-Stevens Point for yourself or any of your personnel?

YES \_\_\_\_\_ NO \_\_\_\_\_

For what department(s) of your operation? How many individuals from each?

2. Which courses from the enclosed list would be of interest to your organization?
3. Are there any specific areas of your operation in which further education and/or training would be useful e.g. environmental impact statement preparation, harvesting methods, percolation testing, BOD determination, chemical engineering, etc.? (Specify)

4. Are there any related courses that would be beneficial i.e. business management, economics, accounting? Please describe.
5. Should college degree credits be available for the courses?
6. Would you prefer having the course offered in evening sessions of one to three hours per week extending over a period of several months or in a concentrated full-time session of one to three weeks? Actual length will vary with the course taught.
7. Could your personnel travel to attend the courses?  
Could attend only if held locally: \_\_\_\_\_  
Could travel less than 30 miles : \_\_\_\_\_  
Could travel 30 to 50 miles : \_\_\_\_\_  
Could travel 50 to 100 miles : \_\_\_\_\_
8. Do you have any facilities that could be used in conducting these courses? (examples -- laboratories, meeting rooms, closed circuit TV, field operations) If "yes" please specify.

9. Would the costs of attending pertinent courses be borne by the employee-student or could your administration provide funds?
  
  
  
  
  
  
  
  
  
  
10. When would be the best time of year to offer these courses?  
Winter\_\_\_\_; Spring\_\_\_\_; Summer\_\_\_\_; Fall\_\_\_\_
  
  
  
  
  
  
  
  
  
  
11. Do you feel there is a need for workshops, conferences, or symposiums on any specific natural resources or management topics? If so in what areas?
  
  
  
  
  
  
  
  
  
  
12. Are there any "special interest" programs e.g. hunting safety, first aid, lifesaving, that you or your employees would find beneficial to attend?
  
  
  
  
  
  
  
  
  
  
13. Are you familiar with the UW-Stevens Point College of Natural Resources Internship Program?

Do you desire more information about this program?

Would you be interested in having an intern? Why or why not?

November 19, 1975

University of Wisconsin -- Stevens Point  
College of Natural Resources  
Stevens Point, Wisconsin 54481

Extension Agents

Sir:

The College of Natural Resources of the University of Wisconsin at Stevens Point is presently in the planning phase of expanding its continuing education program. The objective of this program is to provide extensive or intensive training to personnel working in the industries or agencies directly concerned with natural resources; i.e. pulp and paper engineering, forestry, soils, water, and wildlife.

In order to properly develop this program a survey is being conducted to determine if there is a demand for such courses and which courses are most desired. Enclosed is a list of courses currently offered by the College of Natural Resources at UW-SP. These courses are not necessarily the only courses that would be available in a continuing education program. Courses and course material can be modified to fit expressed needs. Also enclosed is a questionnaire that we would like you to give thoughtful consideration.

I will be traveling around the state during the next semester obtaining data for this survey. Obviously I will not see everyone who would be interested in such courses. If you know of any person or group in your area that would be interested in a program of this type, please note them on the questionnaire.

The questionnaire may be turned in at the College of Natural Resources office, or by returning it in the postpaid envelope.

Any comments would be appreciated.

Sincerely,

Thomas Castonguay  
Survey Coordinator

UW-STEVENS POINT COLLEGE OF NATURAL RESOURCES  
CONTINUING EDUCATION SURVEY QUESTIONNAIRE

1. Would a continuing education program offered by UW-SP be of interest to you or any person or group that you know of?

Yes \_\_\_\_\_ No \_\_\_\_\_

If yes please list Name, Occupation, and Address.

2. Which courses from the enclosed list would be of interest?

3. In what areas of Natural Resources would education or training be useful, e.g. environmental impact statement preparation, harvesting methods, percolation testing, BOD determination, etc.?



9. When would be the best time of the year to offer these courses?

Winter \_\_\_\_; Spring \_\_\_\_; Summer \_\_\_\_; Fall \_\_\_\_

10. Do you feel there is a need for workshops, conferences, or symposiums on any specific natural resources or management topics? If so, in what areas?

11. Are there any "special interest" programs, e.g. hunting safety, first aid, lifesaving, that would be beneficial?

## Selected Courses In Natural Resources

### Forestry:

#### 321 Dendrology

The identification, classification, and economic importance of the principal U.S. forest trees. Emphasis is placed on nomenclature and identification of commercial species.

#### 322 Forest Mensuration

A basic course in the techniques of measuring forest stands and products. Includes computer and calculator use, statistical methods in sampling, cruise patterns, growth projection methods significance tests, tree form grading, and land survey systems.

#### 324 Forest Protection

A course concerned with the detection, prevention, control and use of fires. Includes an introduction into the National Fire Danger Rating System.

#### 325 Principles of Range Management

A study of the areas of the country that are used for the grazing of domestic animals. An applied plant ecology course emphasizing soils and techniques used in evaluating range areas for the production of plant biomass.

#### 332 Silvics

Ecological foundations of silviculture with reference to forest site factors; influence of forest on the environment; growth and development of trees and stands; origin, development, and classification of forest stands.

#### 333 Urban Forestry

The management of trees and other vegetation in metropolitan areas for the enhancement of the urban environment.

#### 424 Forest Pathology

Identification, ecology, prevention, and control of major disease causing agents affecting forest and shade trees and wood in service.

## Natural Resources

### 171 Elementary Surveying

The use of tape, compass, level, transit, and stadia plane table. The study of the US land system, mapping, Traverse and closure, area computation and profiles.

### 370 Resource Management for Environmental Quality

Natural, social, and economic factors influencing the quality of mans environment.

### 371 Conservation Administration

Basic administrative principles that apply to all fields. Administrative procedures used in the management of natural resources in the state of Wisconsin by selected agencies at the federal, state, and local levels, and how they relate to each other.

### 372 Resource Economics

Basic micro-economic principles as they relate to resource utilization.

### 373 Agronomy

Management of grain and forage crops; crop morphology, specialized machinery of north central states crops; a discussion of important tropical crops.

### 374 Environmental Interpretation Methods

Methods for revealing the significance of natural and human history to visitors at parks, recreation areas, museums and other institutions; verbal and non-verbal methods explored in relation to interpretive signs, trails, exhibits, and visitor centers.

### 393 Environmental Law Enforcement

Law enforcement practices as they pertain to natural resources. Subtitles changed each time the course is offered.

### 473 Resource Policy and Law

Legislation pertaining to natural resources with consideration given to the need for, purpose of, and implementation of such laws.

#### 474 Integrated Resource Management

Integrated management of resources with emphasis on combinations of principles necessary to the formulation and implementation of natural resources policy; special attention to current issues, problems, and trends.

#### 480 Urban and Regional Planning Practices

The history and analysis of major current problems facing public and quasi-public planning agencies; review of past, current, and possible solutions in area resource management.

### Soils Science

#### 260 Introduction to Soil Resources

The origin and development of soils; physical, chemical, and biological soil properties and their relationship to soil fertility.

#### 263 Soil Profile and Description Writing

Familiarization with the soil profile and horizons in preparation for soil mapping; taking field notes, description of soil profile, soil morphology, and classification.

#### 361 Forest Soils

How soil under forest cover differs from soil under other use; properties of soils in relation to silviculture and nursery management.

#### 362 Soil Genesis and Morphology

Geologic origin, characteristics, and taxonomic grouping of soils; soil survey methods and mapping procedures.

#### 364 Soil Analysis

Laboratory analysis of soil and plant nutrients; emphasis on why analysis is needed, selecting a procedure, analytical problems, interpreting soil results for plant needs.

#### 365 Interpretations for Land Use Planning

A study of soil properties and their influence on land and facility use; field methods of determining engineering classifications.

**461 Soil Management**

The causes and control of erosion, fertilizers and plant responses; effects of various soil additives (to include pesticides) and the control of these effects.

**465 Soil Physics**

An empirical study of the physical properties of soils and how they influence the ability of soil to support plant life and engineering facilities.

**Water Resources****382 Water Quality Management**

Fundamental concepts in water quality management and special emphasis on selected water quality control systems.

**389 Hydrology**

Physical basis of surface and sub-surface water occurrence and flow; measurement, analysis, and prediction of hydrologic phenomena.

**480 Water Analysis**

Physical, chemical, and biological examination of unpolluted and polluted water.

**481 Pollution Ecology**

Effect of physical and chemical pollution on populations of aquatic plants and animals; relationship of pollution to man, including water quality requirements for recreation, public health, agriculture, and industry.

**Wildlife****140 Introduction To Wildlife Resources**

Wildlife resources of the United States; the importance of wildlife in our past and present economic and cultural life, basic principles of wildlife ecology.

**141 Wildlife Forum**

Environmental issues related to the maintenance of wild animal populations with emphasis on the effects of land and water use upon animals.

**441 Limnology**

Physical, chemical, and biological phenomena of freshwater communities.

**442 Limnological Methods**

Laboratory and field methods used in freshwater investigations.

**444 Fisheries Management**

Principles of management of inland waters for fish production.

**450 Wildlife Management Techniques**

Techniques of managing wildlife populations; wildlife censuses and control measures; emphasis on techniques of wildlife management as it applies to Wisconsin wildlife.

**451 Wildlife Management**

History and development of wildlife management in the United States; wildlife management principles, coordination of such management with current land use practices.

**453 Wildlife Population Dynamics**

The ecological basis and characteristics of wild animal population growth, interaction, and evolution as it applies to management.

**454 Non-consumptive Uses of Wildlife**

Life histories, behavior, and habitat requirements of wild animals as they relate to management for use other than harvest.

**455 Diseases of Wildlife**

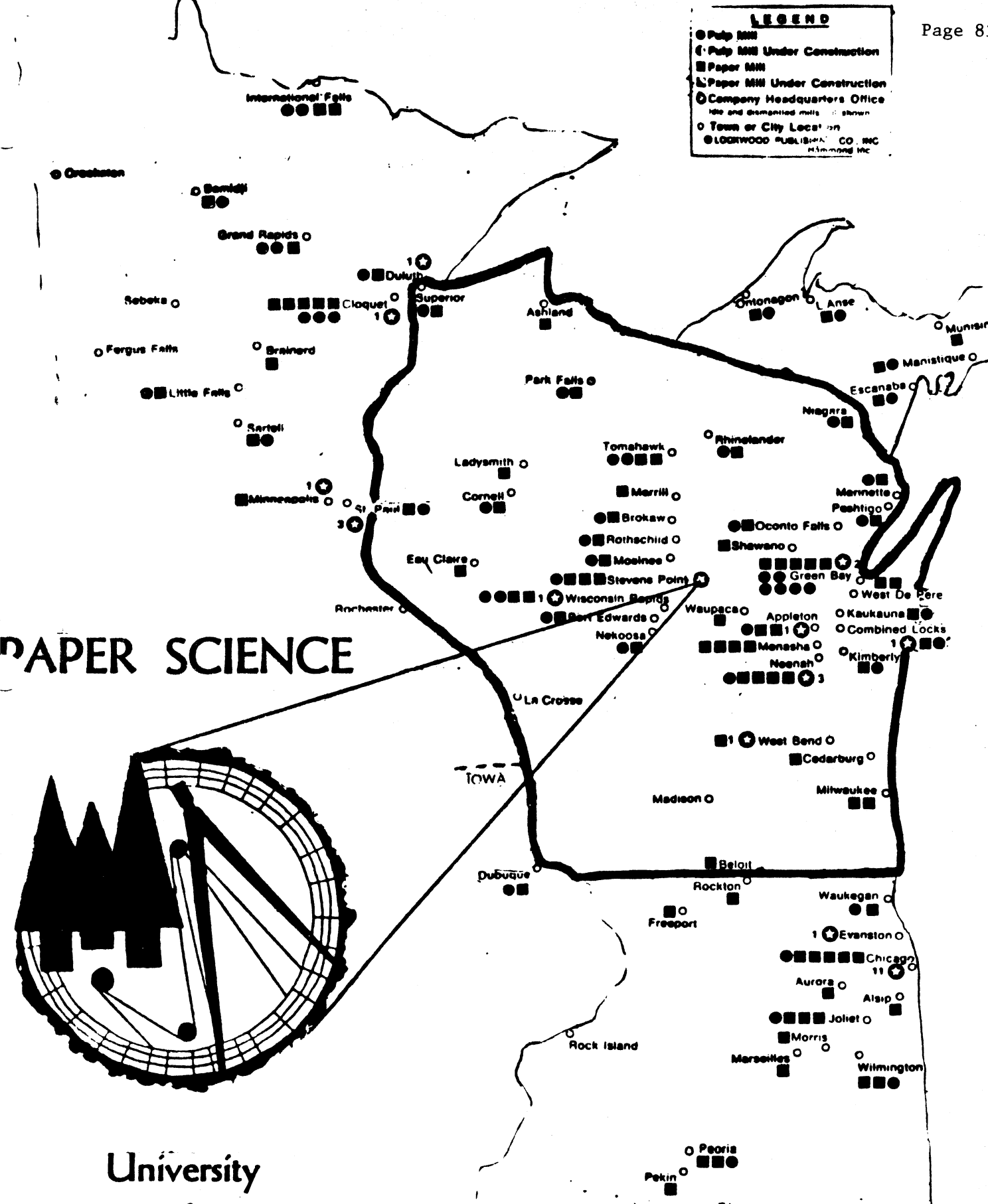
Infectious, parasitic, and chemical diseases as ecological factors affecting wildlife populations.

**Field Seminar Program**

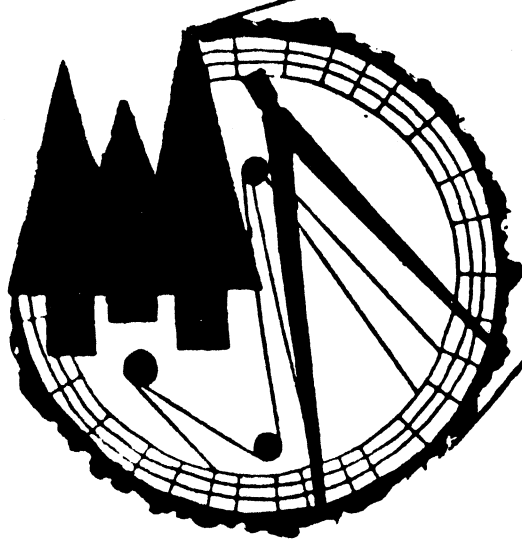
The Field Seminar Program is designed to acquaint participants with various research and management activities not available in an ordinary classroom experience. Field Seminar programs are available in Forestry, Soils, and Wildlife.

**LEGEND**

- Pulp Mill
- ◐ Pulp Mill Under Construction
- Paper Mill
- ◐ Paper Mill Under Construction
- Company Headquarters Office
- ◐ Idle and dismantled mills (not shown)
- Town or City Location
- LOGWOOD PUBLISHING CO., INC.  
Milwaukee, Wisc.



# PAPER SCIENCE



University  
of  
Wisconsin

# COURSES

PAPER SCIENCE & ENGINEERING - CURRICULUM SUMMARY - REQUIRED COURSES & ELECTIVES

CHEMISTRY\*

	<u>Credits</u>
Freshman Chemistry	8
Organic Chemistry	4-8
Analytical Chemistry	4-5
Physical Chemistry	4-8
Wood and Pulping Chemistry**	4
Polymer Chemistry elective	0-3
Advanced Chemistry electives	0-6
Colloid and Surface Chemistry**	3
	<u>27-43</u>

PAPER SCIENCE AND ENGINEERING\*\*

Introduction to Pulp and Paper Processes	0-2
Pulp and Paper Laboratory Methods	0-2
Mechanics of Deformable Media	0-3
Principles of Mass and Energy Balance	4
Principles of Corrosion	0-2
Electrical Engineering Concepts	0-1
Heat Transfer Operations	3
Fluid Mechanics and Hydraulics	3
Industrial Thermodynamics and Kinetics	3
Mass Transfer Operations	3
Process Simulation and Control	4
Senior Seminar I,II	2
Transport Operations in Fibrous Systems	3
Paper and Fiber Physics	3
Systems and Economic Engineering	3
Engineering Design Project	1
Senior Research Problem	0-3
Summer Mill Experience I,II	2
	<u>39-43</u>

MATHEMATICS

Analytical Geometry & Calculus	12
Computer Science	2-8
Numerical Analysis	0-3
Statistics	3
Advanced Mathematics electives	0-3
	<u>17-29</u>

PHYSICS

General Physics	11
Electronics elective	0-4
	<u>11-15</u>

UNIVERSITY GENERAL DEGREE REQUIREMENTS

Communication 101	2
Humanity electives	9
Social Science electives	9
History	6
Physical Education	4
Freshman English	6
	<u>36</u>

FOREST AND WATER RESOURCE

Limnology	3
Natural Resource electives	0-9
	<u>3-12</u>

\* 34 credits required for a co-major in chemistry

\*\*Engineering courses are taught in the Paper Science Department

PAPER SCIENCE & ENGINEERING  
RECOMMENDED CURRICULUM

Freshman Year: Fall Semester

Chem 115 - General Chemistry I	4
Math 107 - College Algebra and Trigonometry	4
P.S. 101 - Introduction to Pulp & Paper Processes	2
English 101 - Freshman English	3
Elective	3
	16

Credits

Spring Semester

Chem 116 - General Chemistry II	4
Math 110 - Calculus and Analytic Geometry I	4
Physics 110 - Mechanics	3
English 102 - Freshman English	3
Computer Science 106 - Mathematical Programming	2

Credits

	4
	4
	3
	3
	2
	16

Sophomore Year:

Chem 225 - Organic Chemistry I	3
Chem 248 - Quantitative Chemistry Lab	2
Math 111 - Calculus and Analytic Geometry II	4
Physics 211 - Heat, Sound, Electrostatics	4
P.S. 210 - Pulp & Paper Laboratory Methods	2

15

Chem 226 - Organic Chemistry II	3
Chem 228 - Organic Chemistry Lab	2
Math 212 - Calculus and Analytic Geometry III	4
Physics 212 - Electricity, Magnetism, Optics	4
P.S. 215 - Principles of Mass & Energy Balances	4

17

Summer: Paper Science 300 - Summer Mill Experience I 1 cr.

Junior Year:

P.S. 350 - Wood and Pulping Chemistry	4
P.S. 320 - Fluid Mechanics and Hydraulics	3
Chemistry 330 - Physical Chemistry	4
Economics 200 - General Economics	3
Elective	3

17

P.S. 325 - Heat Transfer Operations	3
P.S. 365 - Colloid and Surface Chemistry	3
P.S. 312 - Principles of Corrosion	2
Economics 330 - Statistics	3
Wildlife 441 - Limnology	3
P.S. 355 - Paper and Fiber Physics	3

17

Summer: Paper Science 400 - Summer Mill Experience II 1 cr.

Senior Year:

P.S. 440 - Industrial Thermodynamics & Kinetics	3
P.S. 441 - Mass Transfer Operations	3
P.S. 460 - Process Simulation and Control	4
P.S. 490 - Senior Seminar I	1
Electives	6

17

P.S. 475 - Transport Operations in Fibrous Systems	3
P.S. 485 - Systems and Economic Engineering	3
P.S. 486 - Engineering Design Project	1
P.S. 495 - Senior Seminar II	1
Electives	9

17

## COURSE DESCRIPTIONS

Paper Science 101. Introduction to Pulp and Paper Processes. Two Credits (30 hours). A survey of the pulping and papermaking processes, with emphasis on present technology and raw materials; field trips to observe commercial operations.

Paper Science 210. P&P Laboratory Methods. Two Credits (60 hours). Precision laboratory methods in pulp, paper, and nonfibrous testing; microscopic techniques; emphasis on statistical analysis of data.

Paper Science 215. Principles of Mass and Energy Balance. Four Credits (60 hours). Basic principles of engineering calculations; stoichiometric relations; heat and mass balances; thermodynamic properties of steam; behavior of ideal and real gases; combined heat and material balances; economic factors.

Paper Science 300. Summer Mill Experience I. One Credit (10 weeks) In order to gain field experience, paper science majors are required to work ten weeks in a pulp and paper mill, with emphasis on manufacturing assignments. The student must submit a comprehensive report on the process to fulfill this requirement.

Paper Science 311. Electrical Engineering Concepts. One Credit (15 hours). A brief introduction to electrical engineering concepts with emphasis on electromechanic energy conversion systems, alternating and direct current machinery, automatic sequences relay logic; as applied to pulp and papermaking process systems.

Paper Science 312. Principles of Corrosion. Two Credits (30 hours). Basic mechanism and causes of corrosion, electrochemistry, metallic oxidation, protection mechanisms and techniques, anodic and cathodic protection coatings; applications to pulp & paper mill systems.

Paper Science 313. Mechanics of Deformable Media. Three Credits (45 hours). Principles of stress, strain, and rate of strain; bending, shearing, and compound stresses in beams; elastic, plastic deformations, creep; mechanics of fibers, paper, and paperboard.

Paper Science 320. Fluid Mechanics and Hydraulics. Three Credits (75 hours). Properties of fluids; momentum transport phenomena; laminar and turbulent flow; macroscopic balances; measurement and control of flow; fluid machinery; engineering calculations and design; economic factors.

Paper Science 325. Heat Transfer Operations. Three Credits (75 hours). Fundamental heat transfer mechanisms: conduction, convection, and radiation; heat transfer coefficients; heat exchange equipment; evaporation and evaporator systems; drying; economic factors. All applications specific to the pulp and paper processes. Study of field operations.

Paper Science 350. Wood and Pulping Chemistry. Four credits (90 hours). The chemistry of cellulose, hemicellulose, lignin, and wood extractives. Wood & fiber microstructure. Chemistry of the commercial pulping and bleaching processes.

Paper Science 355. Paper and Fiber Physics. Three Credits (75 hours). Fiber structure and properties; interfiber bonding; mechanical, optical, and chemical properties of paper; interrelations between structure, ultimate properties, and manufacturing consolidation factors.

Paper Science 365. Colloid and Surface Chemistry. Three Credits (45 hours). Principles of colloid and surface chemistry; electrokinetic and base exchange phenomena; thermodynamics of interfacial systems; adsorption; applications to coatings, flocculation fillers, fines, and wet end additives.

Paper Science 399. Independent Research Problem. One to Three Credits.  
Laboratory or field research in consultation with staff and industry. Emphasis is placed on problem analysis, literature searches, and communication of research result. Credit is awarded on the basis of one credit for each week, or its equivalent, devoted exclusively to a special project.

Paper Science 400. Summer Mill Experience II. One Credit.  
A ten week mill assignment with emphasis on a technical project involving the process or product. The Student must submit a comprehensive report on the process to fulfill this requirement. Prerequisite: Senior standing.

Paper Science 430. Mass Transfer Operations. Three Credits (75 hours).  
Fundamental mass transfer concepts; mass transfer coefficients; gas absorption; filtration; extraction; pulp washing systems; sedimentation; cooling, humidification, and air conditioning; drying; economic factors. Applications specific to the pulp and paper processes. Study of field operations.

Paper Science 440. Industrial Thermodynamics and Kinetics. Three Credits (75 hours).  
Thermodynamic properties; energy and entropy balances; thermodynamics of energy conversion; combustion, steam, and vapor power cycles; energy recovery systems; chemical kinetics and reaction engineering; economic and environmental factors. Applications specific to pulp and papermaking systems. Study of field operations.

Paper Science 460. Process Simulation and Control. Four Credits (90 hours).  
Dynamic behavior and control of pulp and papermaking processes; process model formulation and solution utilizing Laplace transform, analog, and digital computing techniques; analog and digital control theory and equipment; controller tuning. Study of field operations.

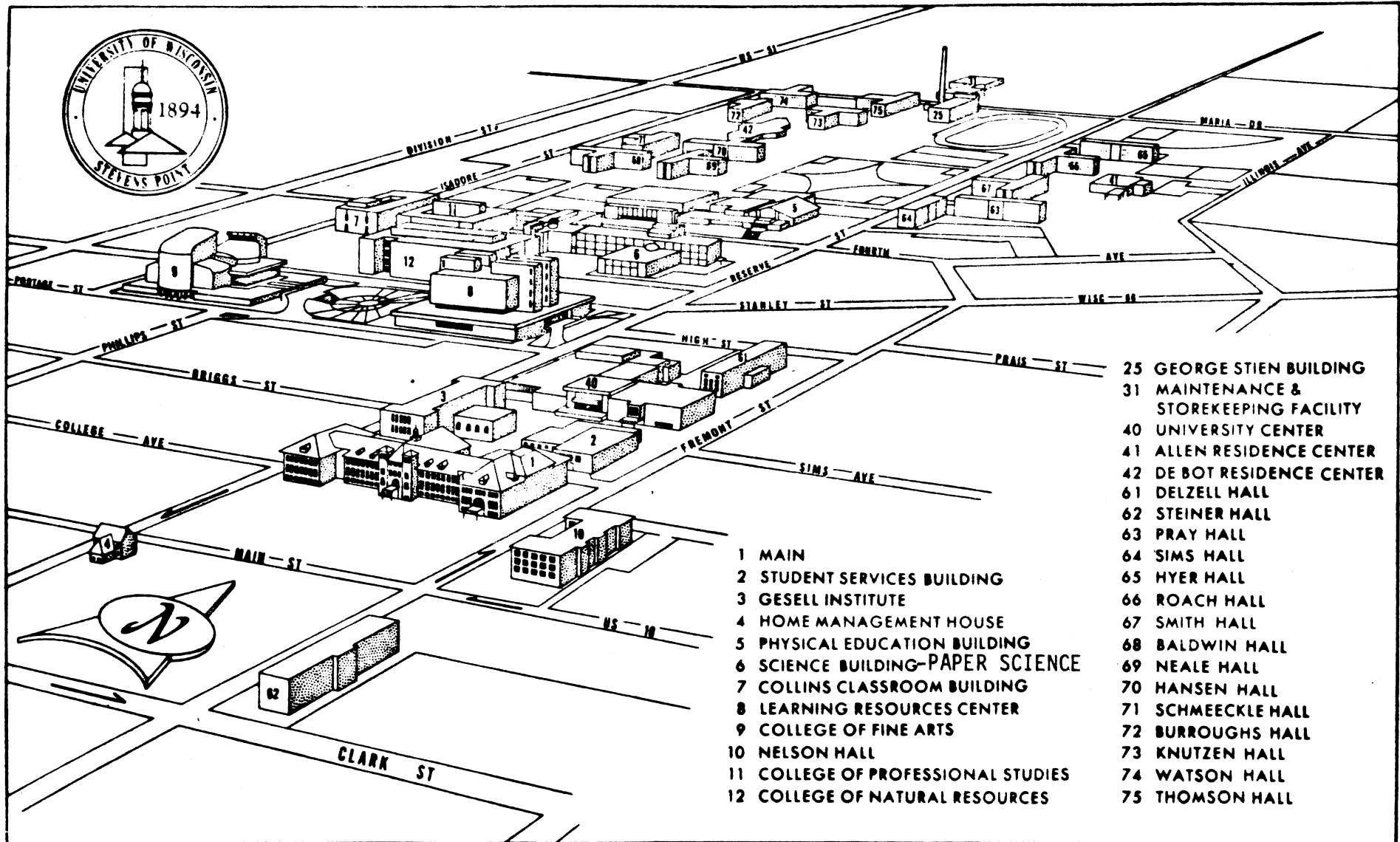
Paper Science 475. Transport Operations in Fibrous Systems. Three Credits (75 hours)  
Hydrodynamics of fibrous suspensions; dynamics of sheet formation and water removal; fundamentals of pressing; analysis of the drying process in terms of heat and mass transfer; economic factors; engineering calculations performed on full scale production papermaking equipment.

Paper Science 485. Systems and Economic Engineering. Three credits (45 hours)  
Engineering economics; interest and economic equivalence; methods of comparing project and investment alternatives; public benefit analysis; forecasting; optimization economic modeling and simulation emphasizing computer techniques.

Paper Science 486. Engineering Design Project. One credit (45 hours).  
Individual student project: project definition; equipment selection and sizing; capital and operating cost estimation; economic evaluation and justification; oral and written presentation of project. Student projects include environmental and energy systems important in the pulp and paper industry.

Paper Science 490. Seminar I. One Credit (15 hours).  
Orientation to technical and professional aspects of the paper industry; effective use of literature and technical communication techniques; presentation of information by students, staff, and guest lecturers.

Paper Science 491. Seminar II. One Credit (15 hours).  
Use of literature, procedures in designing a research project, and the presentation of information by students, staff, and guest lecturers.



- 1 MAIN
- 2 STUDENT SERVICES BUILDING
- 3 GESELL INSTITUTE
- 4 HOME MANAGEMENT HOUSE
- 5 PHYSICAL EDUCATION BUILDING
- 6 SCIENCE BUILDING-PAPER SCIENCE
- 7 COLLINS CLASSROOM BUILDING
- 8 LEARNING RESOURCES CENTER
- 9 COLLEGE OF FINE ARTS
- 10 NELSON HALL
- 11 COLLEGE OF PROFESSIONAL STUDIES
- 12 COLLEGE OF NATURAL RESOURCES
- 25 GEORGE STIEN BUILDING
- 31 MAINTENANCE & STOREKEEPING FACILITY
- 40 UNIVERSITY CENTER
- 41 ALLEN RESIDENCE CENTER
- 42 DE BOT RESIDENCE CENTER
- 61 DELZELL HALL
- 62 STEINER HALL
- 63 PRAY HALL
- 64 SIMS HALL
- 65 HYER HALL
- 66 ROACH HALL
- 67 SMITH HALL
- 68 BALDWIN HALL
- 69 NEALE HALL
- 70 HANSEN HALL
- 71 SCHMEECKLE HALL
- 72 BURROUGHS HALL
- 73 KNUTZEN HALL
- 74 WATSON HALL
- 75 THOMSON HALL

# UNIVERSITY OF WISCONSIN - STEVENS POINT

# UNIVERSITY OF WISCONSIN

## Stevens Point

### COLLEGE OF NATURAL RESOURCES

#### Student Intern Program



Amiel O. Trauner (Dean) Phone (715) 316-1617 (715) 316-2656

Robert J. Engelhard (Program director) Phone (715) 316-1617

## WHAT IT IS

*The College of Natural Resources, University of Wisconsin--Stevens Point offers undergraduate majors in Forestry, Resource Management, Soil Science, Water Resources and Wildlife (fisheries or game) Management. Additional undergraduate minors are also offered in Outdoor Education and Environmental Law Enforcement. A graduate program in Natural Resources also provides an opportunity for advanced study in one of the undergraduate areas leading to the degree of Master of Science. In 1974 more than 1250 undergraduate students enrolled as majors in one of the professional degree programs offered by the College of Natural Resources.*

*The program's primary objective is to provide students with an opportunity to gain valuable on-the-job experience in their chosen profession while at the University. The intern program utilizes facilities and experience of professionals in government and industry in a program of learning through work experience. University credit is earned toward graduation and the boundaries of the University are extended beyond the campus.*

*There are additional advantages as well. Students receive relevant education and an opportunity to earn a commensurate salary for work performed. Faculty have an opportunity to work with student and employer away from the campus, where the intern is working. Employers become part of the faculty, have the opportunity to structure work experience to provide training he considers most important and relevant, and has the opportunity to learn more about men and women of the University of Wisconsin--Stevens Point.*



Stevens Point

COLLEGE OF NATURAL RESOURCES

Student Intern Program

Daniel O. Trainer (Dean) Phone (715) 316-1617 (715) 316-2656

Robert J. Engelhard (Program director) Phone (715) 316-

## HOW IT WORKS

*Any successful intern program depends on cooperation between faculty, student, and employer so that all will benefit from the relevant experience. In order to attain the objectives of a quality educational experience an intern program usually contains these ingredients.*

### The Employer providing:

1. Professional employment which offers a variety of training experiences.
2. Professional supervision to insure the intern will learn the tasks he will be called on to perform and the problems he will face in the practice of his profession.
3. Pay workman's compensation insurance and other coverage as required in an employer-employee relationship.
4. Evaluate intern and his academic training. Consult with the student and his university coordinator as necessary.

### The University providing:

1. Faculty to assist in program cooperation and development.
2. University credit commensurate with the intern experience.
3. Facilities for the selection of qualified student interns by the employer. This includes collection of applications from interested students and making available university facilities for interviews as required by employers.
4. A process for program and student evaluation including planning, visiting student and employer during the period of employment and post-employment evaluation.

### The Intern will:

1. Meet the terms of his employment, unless for reasons of health or other unforeseen circumstances, he is unable to fulfill his agreement.
2. Provide evaluation of the intern experience and suggest improvement.
3. Upperclassmen may be required to study a specific mutually agreed upon project, provide a report of this study and make recommendations.

*The objective is an adequately supervised program providing practical professional experience. Specific details necessary to achieve this end can be arranged to suit all interested participants.*



14. Where (geographically) would you be willing to work in an internship?

15. About how much income will you need this summer in order for you to be able to afford continuing in school next year? In other words, what pay would you have to receive for working as an intern this summer?

16. What date could you be able to start an internship \_\_\_\_\_

17. How many weeks will you be available for work after that date \_\_\_\_\_

18. About your background, before you came to college, which of the following statements comes closest to describing your background:

Farm (List principal enterprises \_\_\_\_\_)

Rural north woods

Rural non-farm (less than 250)

Small town (250-5000 population)

Medium urban (5000-50,000 population)

City (50,000+ population)

If more than one apply, indicate how old you were next to those squares checked.

19. In the space provided, briefly state what you hope to do after you graduate, the interests you have in natural resources and make any comments you feel will help us to best match you with an internship. Be sure to list any special skills you have or any vocational training you have had.

20. Give the names of two references from the U.W.S.P. faculty.