Agenda Item: 12.

MEMORANDUM

TO THE BOARD:

SUBJECT: General's Manager Report

DATE: July 1, 2004

FROM: Steve Oltmans, General Manager

A. **INFORMATION/EDUCATION REPORT**: A copy of the I&E Report detailing Information and Education activities of the District for the month of June, 2004, is attached for your review.

B. **MISCELLANEOUS/PERSONNEL ITEMS**:

1. Thank You Letters and Notes:

   - Thank you letter from Dan Wiley, President of the National Association of Recreation Resource Planners. Mr. Wiley thanks the GM for his contributions to their 2004 Conference which was held in Omaha. The District hosted trail tours on Monday and Wednesday afternoons for the group.

   - Thank you letter from Todd Skoog, Lt Col, Corps of Engineers, District Engineer. Lt Col Skoog thanks the District for having the Relinquishment of Command ceremony on May 28th at the Natural Resources Center. Lt Col Skoog commended staff members **Jean Tait, Bernadet Taylor** and **Ryan Trapp** for their help.

   - Thank you note from Janice Bosen, Scleroderma Fund Raising Committee. The Omaha Scleroderma Support Group held their annual fund raiser "Stepping Out to Cure Scleroderma" at Chalco Hills on Sunday, June 6, 2004. Janice, a former P-MRNRD employee, reported that the group raised $28,000. She commended park staff members **Jana Durbin, Jeff Koerten** and **Tom Crofoot** for their help with the event.

   - Thank you not from Celeste Sully, Visiting Nurse Association Chaplain. Ms. Sully thanked the District for the use of the Board Room for the VNA Hospice Retreat on June 24, 2004. She noted that, "The facility was terrific and a great place to get away for a day."

C. **REPORT ON PURCHASES – CONSTRUCTION SERVICES, PROFESSIONAL SERVICES, PERSONAL PROPERTY**: Pursuant to Board direction, attached is a report indicating construction services, professional services and personal property purchases for the month of June, 2004. Please review this report and contact me if you have any questions.

D. **CURRENT AND ON-GOING PROJECTS – P-MRNRD LEGAL COUNSEL**: Attached is a copy of the current and on-going projects for District Legal Counsel, Paul Peters, as of June 14, 2004. I would ask each Director to review this listing. If you have any questions, please feel free to contact me.

E. **PAPIO CREEK WATERSHED PARTNERSHIP MEETING:** The Papio Creek Watershed Partnership met on June 17, 2004 at the Natural Resources Center. Items of discussion were: watershed study action items; new interlocal agreement; and preparation for NPDES Phase II permits. A copy of the meeting minutes are attached for your review. The next PCWP meeting is scheduled for July 22, 2004.

F. **PALLID STURGEON/STURGEON CHUB TASK FORCE MEETING**: A meeting of the Pallid Sturgeon/Sturgeon Chub Task Force will be held on July 14, 2004 at 9:30 a.m. at the Aksarben Aquarium at Schramm Park. Agenda items include: new depletions update; research update; and how the potential funding from the 3-State Cooperative Agreement could be used on the lower Platte River. I have attached the agenda and background information for your information.

G. **LISTING OF FORMER AND CURRENT P-MRNRD DIRECTORS**: Pursuant to a request from Director Thompson, a listing of former and current P-MRNRD Directors has been compiled. It is attached for your information.

H. **NEWS CLIPS**:

- May 13, 2004, Grand Island Independent article – Water levels declining. Groundwater levels recorded this spring show decline of 2.5 to 5 feet district wide (Central Platte NRD).
- May 14, Kearney Hub article – Irrigators plead with Johanns for help. LRNRD says settlement makes farming area difficult and getting worse.
- June 11, 2004, Omaha World Herald editorial – Safety on the trails. Project (trail mile markers) will help get rescuers to the right spots.
- June 14, 2004, Omaha World Herald article – Already, farmers fret over Platte. The river – critical to irrigation – is running dry in some areas even earlier than normal this year.
- June 15, 2004, Omaha World Herald article – NRD plans tax hike to build new dam. Ensuring flood control for development in the Papillion Creek watershed is the aim.
- June 16, 2004, Papillion Times article – NRD to raise taxes for new dam sites.
- June 16, 2004, Omaha World Herald article – NRD gives consent to well field. MUD moves closer to building 40 new pumping wells that would serve growth area.
- June 17, 2004, Omaha World Herald article – Bridge to involve fewer frills, more time, money. The revised plan for the Omaha-Council Bluffs link will cost up to $4 million more than originally estimated.
- June 21, 2004, Omaha World Herald editorial – A less expensive footbridge.
- June 21, 2004, Omaha World Herald editorial – Shared opportunities. Improved Council Bluffs – Omaha relationship benefits both cities.

- June 22, 2004, Omaha World Herald article – Corps of Engineers wins river ruling. Changes to the Missouri River meant to protect endangered species won't be required.
- June 23, 2004, Bellevue Leader article – Papio NRD will raise taxes for new dam sites.
- June 23, 2004, Omaha World Herald article – Tax incentives OK'd for riverfront condos.
- June 24, 2004, Omaha World Herald article – Wetlands program seeking farmers. $26 million is available to reclaim 18,200 acres along the Missouri River by 2007.
- June 25, 2004, Omaha World Herald article – Corps says required habitat created. The US Fish and Wildlife Service is expected to endorse the effort on the Missouri River.
- June 27, 2004, Omaha World Herald editorial – Steady on the river. A nifty piece of jurisprudence clarifies procedures in managing the Missouri.
- June 28, 2004, Omaha World Herald editorial – A valuation squeeze. Wholesale change in assessments a poor means of keeping property values fair and current.
- June 29, 2004, Douglas County Post Gazette article – Douglas County overhauls regulations for subdivisions.
- June 30, 2004, Omaha World Herald article – Johanns offers Panhandle helping hand. As drought drags on in the region, the governor outlines options for federal aid.

July 2004
Information & Education Report

Information

- Helped coordinate trails markers special event with Rotary, others.
- Attended Leadership Training at Public Relations Society in New York.
- Continued work on staff survey.
- Continued scripting of new A/V Programs.
- Updated web site pages.
- Began work on Summer 04 SPECTRUM.
- Gave nature hike to YMCA group.
- Shot aerial video for new A/V Programs.
- Gave presentation to Loveland Golden K Group

Education

- Attended 1-day training on "Dealing with the Media" at Leslie & Assoc.
- Organized and presented to 4 groups (~220 children) at Chalco Hills
- Presented 2 Animal Adaptation Programs (~ 130 children)
- Scheduled and Managed 115 volunteer hours
- Presented to 1 boy scout den—Weekend Chalco Hills Program
- Attended Geo-cache training at LPSNRD, worked with LPSNRD Education Staff to develop new education program for our district
- Continued planning with National PF and LEP for the 2005 Pheasant Fest Educational Activities
- Delivered Adopt A School Birthday cards to staff
- Sent in proposal for an LEP workshop at the NATS conference in October
- Attended NRD Board Meeting
- Started working on 'Cultivation' newsletter
- Started recruitment of Visitor's Center Hosts for July and August

National Association of Recreation Resource Planners

June 1, 2004

Steve Oltmans
General Manager
Papio Missouri River NRD
8901 South 154th Street
Omaha, Nebraska 68138

Dear Steve:

On behalf of the National Association of Recreation Resource Planners Board of Directors, 2004 Conference Planning Committee and Attendees, I want to thank you for your contribution to the 2004 Conference last month. We appreciated your remarks at our welcoming session on Monday morning and the tours you hosted Monday and Wednesday afternoons could have not been better.

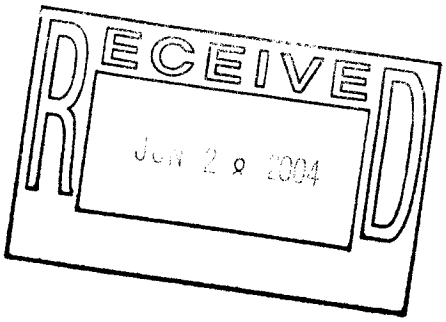
You are truly a unique asset to the State of Nebraska. All of the attendees that I spoke with about your contribution to the conference were very impressed with your range and depth of knowledge about the wonderful changes taking place along the *Mighty Mo*. Many commented on the incredible contributions and roles of the PMRNRD. I knew you would do an excellent job and you exceeded my expectations. I am proud to be your colleague and friend.

Thank you

Dan Wiley
President

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
106 SOUTH 15TH STREET
OMAHA, NEBRASKA 68102-1618

June 24, 2004



REPLY TO
ATTENTION OF:

District Engineer

Mr. Steve Oltmans
Papio-Missouri River Natural Resources District
8901 South 154th Street
Omaha, Nebraska 68138

Dear Mr. Oltmans:

This note is to thank you for allowing the Omaha District, Corps of Engineers, to use your facility for our Relinquishment of Command ceremony on May 28, 2004. Many of those attending commented on the beauty of the building and the surroundings. Of course, the weather was most cooperative and conducive to the ceremony.

In particular, please pass my thanks for their help to Jean Tait and Bernadette Taylor who reserved the date for us and advised my staff on logistics of the ceremony and reception. In addition, Ryan Trapp was most helpful setting up chairs for the audience and tables for the reception.

Thank you again, Mr. Oltmans. My staff and I look forward to working with you soon as we are planning for a Change of Command to our next commander near the end of July.

Sincerely,

Todd E. Skoog
Lieutenant Colonel, Corps of Engineers
District Engineer

SCLERODERMA FOUNDATION
SUPPORT · EDUCATION · RESEARCH

SCLERODERMA FOUNDATION
SUPPORT · EDUCATION · RESEARCH

Omaha Support Group
Stepping Out To Cure Scleroderma
Walk Committee
Janice "Jan" Bosen
(402) 331-5380
jbosen1@netzero.net SUBJECT LINE: Scleroderma

Dear M "O",

On June 6, 2004 the Omaha Scleroderma Support Group held a fund raiser "Stepping Out to Cure Scleroderma" at Chalco Hills, Wehrspan Lake.

We were able to raise $28,000.00 this year. We would like to thank you and your park staff for allowing us to hold our fund raiser at the NRD Headquarters. The Scleroderma group & the walkers were all treated with respect & courtesy by your staff led by Jana Durbin, Jeff Koerten & Tom Crofoot. Many times they would voluntarily help out someone and they were not just the Scleroderma folk but any of the park visitors. Its no wonder so many groups want to hold their annual fund raisers at Chalco.

again thank you Steve and your Park Staff for helping us achieve our 2004 fund raising goals.

Best regards,

Janice Bosen
Scleroderma Fund raising
committee

VNA

VISITING NURSE
ASSOCIATION

Chalco Hills Staff,

Thank you so much for the use of the Board Room for our VNA Hospice Retreat on 6/24/04. The facility was terrific and a great place to get away for a day.

Sincerely,
Celeste Sully
VNA Hospice Chaplain

Report On Purchases
Construction Services, Professional Services, Personal Property

June, 2004

Date	Project Name	Item / Task	Company	Cost
6/1/04	Building Maintenance	Material to recover mtg chairs and office furniture	OB Furniture	$3,735.04
6/2/04	Speakers Bureau	Overview a/v program – ½fee	Leslie Associates	$4,290.00
6/2/04	Speakers Bureau	Metro Trails a/v program – ½fee	Leslie Associates	$2,900.00
6/2004	Project Maintenance	¾" screened rock and 1-1/2" crushed rock	Martin Marietta and Rinker	$2,295.00
6/2004	Project Maintenance	Chemicals for spraying weeds	Frontier Cooperative Co.	$4,700.00

PAPIO-MISSOURI RIVER
NATURAL
RESOURCES
DISTRICT
8901 S. 154TH ST.
OMAHA, NE 68138-3621

Updated: June 14, 2004

Current and On-Going Projects
P-MRNRD Legal Counsel

✪ = **Top Priority**
F = Future Work – No Assignment
N = New Assignment
O = Others Handling
W = Work in Progress
P = PFP's Portion Completed

- **Big Papio Channel Project - West Center Road to West Dodge Road (Woodward):**

- **Little Papio**: (Cleveland)

- **Big Papio** : (Cleveland)

- **West Branch** (Cleveland):

  - Land Exchange with Sarpy Co. (96th St.) (W)
  - Appraisal review (90th to Giles) (P)
  - ✪ Purchase Agreements, deeds (90th to Giles) (N)

- **Western Sarpy Dike** (Sklenar, Cleveland):

  - Closing with Bundy's (potentially modify ROW/offer) (F)
  - Complete easements – three dikes and one drainage ditch (F)
  - ✪ Amended drainage ditch easements on Hickey (First National and Bundy Properties) (W)
  - Levee ROW Documents (RSP, etc.) (P)
  - Cabin ROW Documents, as needed (P)
  - ✪ Design Build Phase II Agreement (W)

- **Floodway Purchase Program** (Woodward):

  - Floodway Property Purchase Agreements as needed (F)

- **Trail Projects** (Bowen):

  - Bennington Trail Interlocal Agreement (P)

- **Missouri River Corridor Project** (Becic):

  - California Bend – Final settlement with tenant (Wright's) (W)
  - Lower Decatur Bend – Appraisal Review, ROW documents and habitat easements (W)
  - Missouri River Pedestrian Bridge Professional Services Contract Review (P)

- **USDA P.L. 566 Projects, Silver Creek and Pigeon/Jones Watershed** (Puls/Cleveland):

  - Silver Creek Site Easements– as needed (W)
  - Release of Site S-7 Easement (W)
  - ✪ Papio Site S-27 (Fox Ridge Estates) Trail Easements (W)
  - D-17 Agreement (Waterford) ROW (W)

- **Papio Watershed Dam Sites**:

  - Dam Site 19 agreement (Petermann) (F)
  - Dam Site 13 Agreement (Petermann) (F)

- **Papio Creek Watershed Partnership (Stormwater)** (Woodward):

  - NRD Bonding Authority Legislation (W)

- **Rural Water Projects**: (Sklenar)

  - ✪ Agreement with SID 296 for WCRW #1 (W)
  - ✪ Warranty deed for WCRW#2 water tower property (N)

- **Other**:

  - Interlocal Agreement with Bellevue for Missouri Riverfront Development (P) (Becic)

PAPILLION CREEK
WATERSHED PARTNERSHIP

MEETING MINUTES

Meeting on Comprehensive Stormwater Management
June 17, 2004 - 10 AM to Noon - Board Room
Natural Resources Center, 8901 S. 154th Street, Omaha, NE

Attendants

The following were in attendance: Laurie Carrette Zook (HDR), Lyle Christensen (HDR), Kent Holm (Douglas County), Mark Wayne (Sarpy County), Mike Boyle (Douglas County), Joe Soucie (La Vista), David Goedeken (Bellevue), Marty Grate (Omaha), Pat Slaven (Omaha), Karen Klein (Omaha), Mike Kemp (Offutt AFB), Steve Tonn (Douglas/Sarpy County Extension), Rick Wilson (USGS), Marlin Petermann (P-MRNRD), and Paul Woodward (P-MRNRD).

Purpose

A Partnership meeting was held on the above date in order to discuss topics stated in the attached agenda. The meeting began at approximately 10:10 AM.

1. Introductions

   - Marlin Petermann (P-MRNRD) opened the meeting and everyone introduced himself or herself. An agenda and sign-up sheet were distributed.

2. Watershed Study Action Items

   - Lyle Christensen (HDR) briefly reviewed the components of the draft Watershed Tools Guidance Manual and noted that HDR's goal was to complete this draft by the end of June. Laurie Carrette Zook (HDR) quickly reviewed the intent of the sediment yield portion of this guidance manual. Paul Woodward handed out minutes from the recent June 10, 2004 subcommittee meeting and then summarized previous discussions concerning the review and use of the manual. Lyle Christensen (HDR) explained how the databases could be used to record data and history of NPDES activities; he suggested that we hold a short workshop to step through a typical data entry for each annual NPDES reporting period. Marty Grate (Omaha) explained that individual entity reports may be required by NDEQ to meet their signatory requirements, but that similar and "permit" specific reports could easily be prepared for each entity. Marty also reviewed the status of the proposed Stormwater Manual Design updates and the possible use of the City of Lincoln's Stormwater and Erosion Control Design Manual, available for review at http://www.lincoln.ne.gov/city/pworks/watrshed/drainage/index.htm. He also noted that the design manual appendix recently drafted by Omaha to meet their NPDES requirements would serve as a possible back-up in case the revision using Lincoln's manual failed to pass. It was concluded that a revised draft of the Watershed

"Tools" Guidance Manual would be made available for review following its completion near the end of June.

- Laurie Carrette Zook (HDR) explained that HDR was currently incorporating review comments from the NRD into the Multi-Reservoir Analysis report scheduled to be finished by early August. She also mentioned that an article in the Omaha World Herald concerning the District's plan to raise it's tax levy 1 cent for the dams had generated some early feedback concerning their report. The reservoirs potential impacts to roadways was discussed and Laurie noted that this report would not take into account the secondary impacts of increased traffic volume on the remaining roadways.

3. New Interlocal Agreement

- Paul Woodward (P-MRNRD) informed those present that all entities in Douglas and Sarpy County had approved the agreement while Washington County and Kennard were planning to consider approving the agreement in early July. Marlin Petermann (P-MRNRD) explained that Washington County previously discussed the agreement and had debated limiting their contribution to $10,000 or less, which would basically cover the cost of participating in the Watershed Master Plan. Mike Boyle (Douglas County) expressed his concern that the taxpayers in the metro area had previously helped to pay for watershed conservation practices in rural areas and that rural taxpayers were now refusing to help the urban area deal with its water quality problems. There was considerable discussion concerning Washington County's involvement and their need to be part of this Partnership. Kent Holm (Douglas County) expressed that he felt it would be important for Washington County to not only participate in the planning process, but for them to adopt and enforce the recommended ordinance and regulations in order to provide consistent stormwater management throughout the Watershed. Lyle Christensen (HDR) explained that even though Washington County is not legally required to proactively protect their runoff at this time, they will be required to comply with TMDL standards in the near future. Becoming a member of the Partnership now would help them meet these requirements as they come on line and insure that they have a voice in Watershed decisions that will impact the County. Discussion ended and everyone was reminded to try to provide positive support to representatives or interested public in Washington County.

4. Preparation for NPDES Phase II Permits

- Paul Woodward (P-MRNRD) handed out the recent public notice released by NDEQ on June 11, 2004 concerning the General NPDES MS4 Permit for Douglas, Sarpy, and Washington County. Marty Grate (Omaha) noted that the earliest the permit could become affective is August 1st and the latest would possibly be September 1st.

- Paul Woodward (P-MRNRD) briefly reviewed a few additional issues discussed at the June 10, 2004 subcommittee meeting including annual reporting procedures and the Partnership website. Review of the draft stormwater ordinance was further discussed, and it was decided that initial comments be submitted to Paul Woodward (P-MRNRD) by July 8, 2004.

5. Other Items of Interest

- Pat Slaven (Omaha) reported on some issues raised at the 1st Cunningham Lake Watershed Council meeting held on May 24, 2004, including possibilities for controlling development while improving water quality in the Watershed and lake. She noted that the next Council meeting will be on July 12, 2004 at 7:00 PM in the Florence Community Center. Pat also stated that the end product of these Council and Public meetings will be a draft report from Olsson Associates recommending a comprehensive watershed plan, hopefully by the end of this year. When asked what some of these recommendations might be, she replied that early suggestions have been stricter construction site runoff control, additional sediment retention structures, and possibly land use planning alternatives.

- Marlin Petermann (P-MRNRD) informed the group that a consultant selection committee had recently held interviews with 3 engineering firms interested in completing the Sarpy County Water/Wastewater Infrastructure Study for watersheds in southern Sarpy County draining to the Platte River. He also noted that an Interlocal Agreement would soon be completed by MAPA for the other participants approval and that a study would begin shortly after the agreement was in place.

- Paul Woodward (P-MRNRD) handed out flyers for two NPDES training opportunities, one in Omaha on July 27, 2004 and one put on by EPA in Kansas City on July 20th and 21st. He noted that Marlin Petermann and Paul Woodward would be attending the workshop in Omaha, while Nina Cudahy (Omaha) would attend the EPA workshop. Anyone else interested in attending the EPA workshop should coordinate with Nina. Those wishing to attend the workshop in Omaha should simply register.

6. Next Meeting Dates

- The next Partnership meeting will be held on **Thursday, July 22, 2004 at 10:00 AM in the Board Room** of the Natural Resources Center. No subcommittee meeting was scheduled at this time.

7. Adjourn

- The meeting adjourned at approximately 11:45 AM. An agenda, attendance list, and the handouts passed out at the meeting are available to those members who were not present at the meeting **upon request**.

Please contact Paul Woodward at 444-6222 regarding any questions or comments concerning these meeting minutes.

PALLID STURGEON/STURGEON CHUB TASK FORCE MEETING

JULY 14, 2004 9:30 AM

AK-SAR-BEN Aquarium (Schramm Park SRA)

> 9:30 – 9:35	Opening remarks and review of minutes -- **Kirk Nelson**
> 9:35 – 9:45	Financial Report – **Dean Edson**
> 9:45 – 10:00	New Depletions Update – **Sue France**
> 10:00 – 11:30	Research Update – **Ed Peters and Jim Parham**
> 11:30- 11:45	How the potential funding from the 3-State Cooperative Agreement could be used on the lower Platte River – **Brian Barrels**
> 11:45 – 12:00	Peer Review Discussion – **PS/SC Task Force**
> 12:00 – 12:10	Wrap up and set next meeting date and location – **Kirk Nelson**
> 12:10 –1:00	Box lunch at the aquarium
> 1:00 – 3:00	Tour and technique demonstration on the river – **PS/SC Research Crew**

Ecology and management of sturgeon in the lower Platte River, Nebraska

PERFORMANCE REPORT MAY 1, 2003 /APRIL 30, 2004

PREPARED BY:

Edward J. Peters

James E. Parham

Cory N. Reade

Michael T. Kaminski

Jason J. Olnes

Ryan L. Ruskamp

SCHOOL OF NATURAL RESOURCE SCIENCES
UNIVERSITY OF NEBRASKA
LINCOLN, NE 68583 - 0814

TO:

NEBRASKA GAME AND PARKS COMMISSION

Federal Aid in Sport Fish Restoration and Research

Project Number: F-141-R

JUNE 2, 2004

GOALS AND OBJECTIVES:

This study's goal is to quantitatively describe habitat use by sturgeon in the lower Platte River. In addition, this study will include an analysis of the ecological relationships among sturgeon species and other fish species typical of shifting sand-bed rivers, exemplified by the Platte River.

These studies are focusing on the following objectives.

Objective 1: Document habitat use, relative habitat preference, and species assemblages associated with adult and juvenile sturgeon in the lower Platte River.

Objective 2: Document the phenology, and relative abundance of larval recruitment for sturgeon and associated species in the lower Platte River.

Objective 3: Determine how changes in river discharge influence habitat use by sturgeon life history stages in the lower Platte River.

Objective 4: Document the catch of sturgeon by anglers in the lower Platte River.

Objective 5: Develop educational materials and management recommendations for the sturgeon fishery in the lower Platte River.

OBJECTIVE 1

STURGEON SAMPLING APPROACH

Fish are being sampled using a combination of trot lines, drifted trammel nets, stationary gill net sets, trawls, minnow traps, and seines to sample sturgeon and associated species from as wide a range of habitats as possible. Pallid sturgeon to be implanted with radio and sonic telemetry transmitters are collected by trammel netting or trot lines.

Trammel nets were first used experimentally in the same fashion as drifted gill nets during 2002, and exclusively instead of drifted gill nets beginning in 2003. They are drifted in areas along sand bars that have been identified in current research (Snook 2001) to be important habitats for pallid sturgeon. Trammel nets consist of three panels of netting which are suspended from a float line and a single or double lead line. The two outer panels are a larger mesh than the inner panel. Fish are either gilled in the mesh or become bagged within the smaller mesh. Generally, trammel nets are less injurious to fish than gill nets and are also less size-selective (Nielsen and Johnson 1983). In addition, although they are more cumbersome to operate because of multiple, heavier mesh, they tend to be more efficient at catching and retaining fish located on or near the river bottom. Trammel nets used in the Platte River measure 125 feet (38.1 m) long by 6 feet (1.8 m) deep. These nets comply with the standards set forth and that are currently being used by other researchers on the Missouri River Pallid Sturgeon Recovery Team. Benthic fish trawls are also used to sample deeper run and pool habitats for sturgeon and associated species. Trawl sampling has been conducted since May 2001 from Leshara to the mouth of the Platte. This coordinates with the larval fish sampling (Objective 2).

All sturgeon captured are identified using aids such as the Morphometric Character Index

(Sheehan et al. 1999), measured (fork length) and weighed. Samples of fin rays or barbels are being collected as voucher specimens for DNA analysis to confirm Morphometric Character Index identifications. Sturgeon large enough to accept the individual radio telemetry tags are implanted in the field and all sturgeon are tagged with PIT tags so that we can identify them if captured at a later date. Attempts are being made to capture sturgeon which still have active transmitters by netting in regions of the river where transmitter implanted fish are located and where transmitter implanted fish have frequently been found in the past.

Radio tagged fish are being monitored throughout the year, from shore, boat, and aircraft to determine their location. After each fish is located, a Global Positioning System (GPS) unit is used to determine its position. In addition, distances from shorelines and prominent features along the river are measured using a range finder. These recorded locations are being used to determine movement patterns of tagged fish within the river over the 400 to 600+ day, life of the transmitters. A permanent telemetry station has been set up at the Shilling Wildlife Management Area to monitor when radio tagged fish enter or leave the Platte River.

To describe the area used by a telemetry tagged sturgeon, measurements of the habitat, including water depth, mean column velocity, bottom velocity, substrate, and cover, are made at the focal point of the radio signal location and then, three meters upstream, three meters downstream, three meters to the left and three meters to the right of the focal location (Hofpar 1997, and Snook 2001). This combination of measurements is being used to provide a more detailed description of the habitat conditions in the immediate vicinity of sturgeon. This set of measurement locations also encompasses the estimated range of error associated with location of radio signals determined from previous studies of sturgeon and catfish (Bunnell 1988, Chapman

1996, Hofpar 1997). Consultations with statisticians have indicated that the measurements around the focal position for the fish may be useful in determining habitat availability. In addition, single measurements of dissolved oxygen, water temperature, conductivity, and suspended solids are made at each location. This protocol is consistent with those used by similar studies in Montana (Bramblet 1996) and Illinois (Hurley 1998).

Since adult pallid sturgeon are known to be piscivorous, standard seine hauls or other suitable collection techniques are used to sample fish assemblages in the vicinity of each telemetry tagged sturgeon's location. This allows us to determine their association with other fish species. All fish captured in each seine haul are identified, and enumerated. Large individuals of easily identifiable species are released at the site of capture. Small specimens and difficult to identify species are fixed in 10% formalin and returned to the lab for identification, enumeration and cataloging. These specimens are being held in the Nebraska State Museum.

Food habits of shovelnose sturgeon were studied by examination of their stomach contents using pulsed gastric lavage or dissection. To attempt to build a more complete picture of potential sturgeon habitat in the Platte River we are also sampling locations with similar appearing conditions, which have no known sturgeon present using gill nets, seines, and trawls. These collections will be used to evaluate concordance of habitat conditions with potential food sources. Habitat use and preference criteria will be developed from this data set following methods recommended by Bovee (1986), Yu (1996),Yu, et al. (1995) and Yu and Peters (1997). Preference will be determined by evaluating use in relation to availability of each habitat parameter. Availability of habitat are being estimated from habitat data collected by the Nebraska Game and Parks Commission.

ACCOMPLISHMENTS

ENTAGLING GEARS

Entangling gears used in the Platte River included gill nets, both drifted and stationary and drifted trammel nets. Drifted entangling gears (Table 1.1) were effective at capturing 27 taxa and 25 species of fish from the Platte River from the 2000 through the 2003 sampling seasons. Shovelnose sturgeon (865) was the most abundant in the catch, followed by goldeye (361) and quillback (289).

From 2000 and 2001, 165 gill net drifts captured 21 species of fish including, 285 shovelnose sturgeon, 118 goldeye, and 22 quillback. For comparison, in 2003, 122 trammel net drifts captured 23 species of fish including, 357shovelnose sturgeon, 133 goldeye, and 206 quillback. This equals 1.73 sturgeon per gill net drift and 2.93 sturgeon per trammel net drift

On the other hand stationary gill net sets proved to be difficult to use in the Platte River, because they seemed to trap large amounts of drifting detritus and they typically were buried in sand during an overnight set. Table 1.2 details the catch in six gill net sets in the Platte River that caught nine species (mostly shortnose gar and common carp) and no sturgeon. Because of the greater return for time invested from both drifted gill nets and trammel nets and from trotlines, we abandoned the use of stationary gill nets.

TROTLINES

From 2001 to 2003, 153 trotline sets (Table 1.3) captured 190 fish including 182 shovelnose sturgeon. These sets also captured two pallid sturgeon, one in 2001 and the other in 2003. This equals 1.20 sturgeon per trotline set. The overwhelming dominance of sturgeon on

this gear may be attributed to the specific habitats in which this gear is set and guidance from researchers working in the Mississippi River (Morrow et al 1998).

STURGEON RADIOTELEMETRY

In 2003, one pallid sturgeon was tracked and located 17 times by boat and 3 times by air. This fish was presumed to be a wild fish as there were no tags or marking indicating a hatchery raise fish. Shovelnose sturgeon were tracked and located 164 times by boat and 72 times by air. Table 1.4 summarizes the radio telemetry effort from 1998 to 2003. Table 1.5 summarizes the information on fish implanted with transmitters between 2000 and 2003.

An analysis of the sturgeon movement and habitat use, including both shovelnose and pallid sturgeon records in the Platte River, was reported in a Master's thesis by Ben Swigle. The citation and the abstract of his thesis follows:

Benjamin D. Swigle. 2003. Movements and Habitat Use by Shovelnose and Pallid Sturgeon in the Lower Platte River, Nebraska. MS Thesis, University of Nebraska, Lincoln, Nebraska.

Populations of shovelnose sturgeon *Scaphirhynchus platorynchus* and endangered pallid sturgeon *Scaphirhynchus albus* have declined since the early 1900's. A comprehensive description of habitat use and movement by shovelnose and pallid sturgeon is lacking. I used radio-telemetry to determine diel and seasonal movement and habitat use by 17 shovelnose and two wild caught pallid sturgeon in the lower Platte River, Nebraska, from July 2000 through October 2002. Shovelnose sturgeon exhibited upstream movements in April and May followed by downstream movements in June and July of 2001 and 2002. Intensive tracking during day or night 12 hour periods revealed shovelnose sturgeon moved

considerably farther during the night. Pallid sturgeon were captured and released at rkm 26. Fish 621, captured May 3, 2001, entered the Missouri River on June 9th, 2001. Fish 721, caught May 23, 2002, rapidly traveled downstream, entering the Missouri River on May 30, 2002. The lower Platte River is an important migratory destination for shovelnose and pallid sturgeon with spawning by both species likely taking place between late May and early June. Depth, mean column velocity (MCV), and bottom velocity at shovelnose locations averaged 0.90 m, 60 cm/s, 35 cm/s, respectively. Pallid sturgeon used depth, MCV, and bottom velocity averaging 1.30 m, 86 cm/s, 58 cm/s, respectively. Compared with shovelnose, average MCV and bottom velocity use was significantly faster at pallid sturgeon locations. On average, depth use by shovelnose and pallid sturgeon was not significantly different. Both species were frequently located within the main channel where dune-like bottom contours persisted or in areas downstream of shallow sunken sandbars. Protection of such habitats in the lower Platte River is essential to the preservation of shovelnose and pallid sturgeon.

An analysis of the shovelnose sturgeon populations and diet in the Platte River was reported in a Master's thesis by Dane Shuman. The citation and the abstract of his thesis follows:

Dane A Shuman. 2003. The Age and Size Distribution, Condition, and Diet of the Shovelnose Sturgeon, *Scaphiryhchus platorhynchus* in the Lower Platte River, Nebraska. MS Thesis, University of Nebraska, Lincoln, Nebraska.

Due to the federal listing of two of the three *Scaphirhunchus* species, information pertaining to sturgeon biology in general is more pertinent than ever. Natural sturgeon stock throughout their traditional range have been in decline for nearly 100 years due to anthropogenic changes including habitat alteration, overharvest,

and water contamination. Shovelnose sturgeon were captured from four sampling reaches along the lower Platte River, Nebraska during 2000, 2001, and 2002. A total of 516 sturgeon were captured with drifted gill and trammel nets, 87 with trotlines, and 48 in benthic trawls. All sturgeon were weighted, measured, and tagged with passive integrated transponders (PIT tags). In 2001 and 2002 sturgeon had pulsed gastric lavage (PGL) performed for ration analysis and a pectoral fin ray was removed from selected fish for age determination. Lengths of sturgeon ranged from 132-795 mm (FL) and ages ranged from 5 to 14 years. Shovelnose sturgeon consumed large numbers of Diptera specifically members of the Harnishia Complex.

Tests of PGL on the survival of shovelnose sturgeon showed no significant difference between control and experimental fish ($P = 0.7094$), indicating that PGL is a viable technique that can be safely used to evaluate food habits of shovelnose sturgeon, and should be considered safe for pallid sturgeon food habits studies.

STURGEON CHUB SAMPLING APPROACH

Benthic fish were sampled using two different sampling gears. A 1/8 inch mesh seine modified with a chain on the lead line was used to sample water less than one meter deep. A modified otter trawl was used in water over one meter deep. The majority of samples were taken from channel habitat and areas of swift velocity where chubs have been found in previous research (Peters et al. 1989).

Continuing in April, 2003, we collected small-fish community data at the Highway 6 site near Ashland using minnow traps and a seine. Rectangular minnow traps made of 1/4 inch (6.35 mm) wire mesh were deployed at dusk, left undisturbed over night, and retrieved at dawn. Traps were placed in "clusters" of three traps each in three different macro habitats. Typical habitats

sampled include: deeper swift channels, shallow riffle areas, snag eddys (pools), and stabilized bank runs. Each trap was held in place with a six foot (1.8 m) length of rebar rod. Minnow traps were typically set in a side by side by side configuration in broader habitat types (such as deep or shallow runs) or in line with one another in narrower habitats (such as along a bank or behind a snag). At sunrise, traps were removed and fish were either identified and processed in the field or preserved in 10% formalin and processed in the laboratory.

To compare efficiency of minnow traps with another type of sampling gear, a small seine with 1/8 inch (3.18 mm) ace mesh was used. Seine runs were conducted in the habitat type that encompassed the area in which minnow traps were fished. Net length was adjusted to the width of the area fished by minnow traps by rolling the seine onto the brails. Similarly, the length of the areas seined were dependent upon the length of the area in which the minnow traps were set. Average width of seines were 10.5 ft. (3.2 m) and seine runs averaged 12 ft. (3.7 m) long. Additional fish collections using various 1/4 and 3/8 inch mesh seines were employed throughout the river.

In the location of all gear sets, habitat measurements were taken. At the location of each sample, depth, mean current velocity, and mean bottom velocity were measured. Substrate composition and stability (eg. firm vs. soft or shifting sand) was also observed at the location of each sample. Water quality parameters were measured over the entire site. These included: water temperature, dissolved oxygen, salinity, conductivity and specific conductivity, and total suspended solids.

The river was divided into four sections from Leshara to Plattsmouth. Sections were divided as follows: Leshara boat ramp to the mouth of the Elkhorn River, the mouth of the

Elkhorn River to highway 6, highway 6 to Louisville, and Louisville to the mouth of the Platte. Sampling started in May and concluded in September. During this time chub spawning takes place and various age classes were collected.

ACCOMPLISHMENTS

An analysis of the chubs, including sturgeon chubs, in the Platte River was reported in a Master's thesis by Stacey Kopf. The thesis covered the distribution and abundance, associated habitat, and population statistics. The citation and the abstract of her thesis follows:

Stacey M. Kopf, 2003. Habitat Use by Chubs of the Genera Macrhybopsis and Platygobio in the lower Platte River, Nebraska. MS thesis, University of Nebraska, Lincoln, Nebraska.

Abstract: Little information has been published on the distribution, abundance, and habitat use of chubs in their native range of the lower Platte River, Nebraska. A benthic trawl and seine were used to collect speckled chub (*Macrhybopsis hyostoma*), sliver chub (*M. storeriana*), sturgeon chub (*M. gelida*), and flathead chub (*Platygobio gracilis*) during the summers of 2001 and 2002. Speckled, silver, and flathead chub were collected throughout the lower Platte River comprising 89.2%, 10.1%, and 0.67%, respectively, of chubs caught in this study. Sturgeon chub were found downstream of river kilometer 26 comprising 0.08% of chubs caught with 0.01 catch per unit effort (CPUE).

Chubs were found primarily in run habitats with bottom velocities over 0.15 m/s and water depths ranging from 0.12 to 2.4m. Speckled chubs selected for depths of 0.6-1.2 m, bottom velocities of 0.1-0.15 and 0.2-0.25, and 85-90% sand substrate. Silver chubs selected for depths of 0-0.6 m, bottom velocities of 0.4-0.45 m/s, and 85-90% sand substrate. Sturgeon chubs were found in depths of over one meter with bottom velocities of 0.21-0.46m/s over a 75-90% sand substrate. Flathead chub were

found using depths up to one meter, bottom velocities of 0.24-0.56 m/s, and 75-100% sand substrate.

Sexually mature male and female speckled and silver chubs and females with eggs were found and recruitment was observed in of young of the year chubs in both species during spawning months. These factors identified these species with sustainable populations. Speckled chubs were the only species that were identifiable by pectoral fin shape. Neither flathead or sturgeon chub numbers were sufficient to analyze population characteristics such as young of the year addition, or sexually mature chubs. Past research found numerous flathead chubs in the lower Platte River suggesting this population is declining. This research explains chub occurrence and abundance in the lower Platte River giving insight into species and river management needs.

In 2003, we continued to sample for sturgeon chubs, although none were captured. A total of 11 trawl runs, 58 seine hauls, and 135 minnow traps sets were used to capture small benthic fishes. These collections captured 21 speckled chubs, and 26 silver chubs.

Species Diversity and Relative Abundance Using Minnow Traps

Ten species were encountered using minnow traps during 2002. A total of 172 individual minnow traps were fished overnight in the river. Channel catfish made up the highest proportion of the catch followed by red shiners. In 2003, six species were sampled in a total of 135 individual minnow traps. Again, channel catfish made up the bulk of the fish captured, with a few speckled chubs and red shiners. Table 1.6 summarizes the fish collection using minnow traps.

Species Collected Using Seines

During 2003, a total of 58 seines runs were used to sample fish communities in the Platte River. Seventeen different species of fish were collected. Seines collected red shiners most frequently, followed by sand shiners and gizzard shad. No sturgeon or sturgeon chubs were captured with seines in 2003. Fish collections in seines from 1998 to 2003 are summarized in Table 1.7.

PLAN OF WORK

Sampling using trotlines, gill nets, and trawls began in April 2004 and will continue through the summer as water temperatures permit. The capture of pallid sturgeon will be the primary objective and the sampling for these will be curtailed during the summer when water temperatures exceed 16°C to reduce stress on the fish. Monitoring of locations of tagged fish will continue throughout the year. Habitat measurements will commence at ice out in the spring and continue weekly until ice up in the fall. Collections of sturgeon chubs and associated species will continue until mid summer. The use of minnow traps will be suspended due to the low catches of target species.

OBJECTIVE 2:

We are using the occurrence of fish eggs and larvae drifting in the Platte River to accomplish this objective. Larval fish are being sampled at four sites in the lower Platte River (near Two Rivers SRA, Ashland, Louisville, and Plattsmouth) to describe the chronology of reproduction and hatching of all species in the lower Platte River. Sampling commences in May and continues through August of each year to encompass the potential time when sturgeon and sturgeon chub reproduction occurs. Larval fish are being sampled using standard 0.6 mm mesh drift nets. Each net is equipped with a current meter. This enables us to determine the water volume sampled. A sample at a site consists of four net sets for up to 15 minutes each. From 1998 through 2002, larval fish were collected at four sites along the lower Platte River from Columbus to the mouth. Start times for sampling were randomized so that all times of the day had an equal chance for being sampled. Two weeks each month, the site at Ashland was sampled every three hours for a 24 hour period. In addition, samples from the Missouri River, upstream and downstream from the mouth of the Platte are being collected by Nebraska Game and Parks Commission personnel. These samples are analyzed by Platte River project staff, using support provided by Nebraska Game and Parks Commission, to document the relative contributions of the Platte River and Missouri River to sturgeon recruitment downstream. Our initial objective is to determine the spawning time for sturgeon in the Platte River. Samples are preserved in 10% formalin in the field and transported to the lab for analysis. In the laboratory, specimens are sorted from extraneous material, identified to species or to the lowest taxonomic category practicable, categorized to developmental stage, and enumerated. The number of each taxon and developmental stage is being expressed per unit of water volume. All specimens are

retained as vouchers at the Nebraska State Museum. However, selected individuals are sent to the larval fish laboratory at Colorado State University in Fort Collins, Colorado to verify identifications. If sufficient numbers of sturgeon are noted in samples, additional collections, using alternative sampling gear will be implemented. These specimens could then be fixed in solution (70% ethanol) that would allow for DNA analysis to confirm species level identification of sturgeon larvae.

In 2003, the study design for larval fish was modified in an attempt to collect more sturgeon larvae. Previous year's data indicated that we usually collected more larvae at night, and sturgeon sampling data indicated large numbers of sturgeon in the Louisville area. Larval sampling was conducted at two sites. The first site was at the U.S. Highway 6 bridge near Ashland, Nebraska. The second site was just downstream of the Nebraska Highway 50 bridge near Louisville. These sites were samples simultaneously, every three hours starting at 1800 hrs and ending 0600 hours the following morning.

ACCOMPLISHMENTS:

Larval sampling began in 1998 and will continue into the summer of 2004. Prior to the start of the current "Ecology and management of pallid sturgeon and sturgeon chub in the lower Platte River" study, two years of larval fish sampling was completed. These larval fish data are being included in the summary because the current study design was built off the previous study, and with a few changes in sites, the combined studies represent a continuous dataset from 1998 through 2003.

The number of larvae collected, by family, from 1998 to 2003, is summarized in Table 2.1. This includes fish from all sampling efforts in each year. The highest catch of larvae occurred in 1999, and the lowest catch of larvae occurred in 2001.

Between 1998 and 2003, nine sturgeon (*Scaphiryhnchus* spp.) larvae were collected (Table 2.1). The six larvae collected prior to 2003, all came from sampling at the U.S. Highway 6 bridge. Of the three larvae collected in 2003, one was collected at the U.S. Highway 6 bridge, and the other two were collected downstream of Louisville, Nebraska.

Between 1998 and 2003, sturgeon larvae were collected from 15 May to 24 June at water temperatures ranging from 13.6 to 27.4°C (Figure 2.1). At the times sturgeon larvae were collected, mean daily discharge ranged from 136 to 424 m^3/second (Figure 2.2). The sturgeon larvae we collected are probably less than one day post hatch. Larvae this young cannot be identified to species. All sturgeon larvae, with one exception, were collected following increases in water temperature. The relationship between sturgeon spawning and discharge is still unclear. In 1998, 1999, 2001, and 2003, collection of *Scaphirhynchus* spp. larvae occurred following peak discharges above 600 m^3/second. In 2000 and 2002, peak discharges above 600 m^3/second were not present early in May, but sturgeon larvae were still collected.

Lepisosteidae larvae were collected in four out of the six years (Table 2.1). Most of these were shortnose gar (*Lepisosteus platostumus*). Due to the small number collected, no further information will be discussed on this family.

A total of 788 gizzard shad (*Dorsoma cepedianum*) larvae were collected between 1998 and 2003 (Table 2.1). Larvae were collected from 11 May to 3 August at water temperatures

ranging from 16.2 to 29.9 °C (Figure 2.3). Mean daily discharge ranged from 41.8 to 987.7 m^3/second when gizzard shad larvae were collected (Figure2.4).

Cyprinidae larvae outnumbered all other families of fish in the drift with a total of 30,633 larvae (Table 2.1). Common carp (*Cyprinus carpio*) and chub (*Macryhybopsis* spp.) larvae were the only taxa that could be separated from other cyprinid larvae. Therefore, the reference to cyprinids refers to larvae that could not be identified beyond the family level. Cyprinid larvae were collected from 10 May to 15 August and water temperatures ranging from 13.6 to 31.0 °C (Figure 2.5). Mean daily discharge ranged from 16.8 to 987.7 m^3/second when cyprinid larvae were collected (Figure 2.6).

A total of 4,850 *Cyprinus carpio* larvae was collected between 1998 and 2003. Larvae were collected between 13.6 and 29.9 °C (Figure 2.7). Mean daily discharge ranged from 28.5 to 987.7 m^3/second when cyprinid larvae were collected (Figure 2.8).

A total of 8,781 chub larvae was collected between 1998 and 2003. 84.4 percent of these larvae were collected in 1999. *Macrhybopsis* spp. larvae were collected from 11 May to 15 August at temperatures ranging from 13.6 to 31.0 °C (Figure 2.9). Mean daily discharge ranged from 39.3 to 987.7 m^3/second (Figure 2.10).

A total of 3,041 sucker (Catostomidae) larvae were collected from 1998 to 2003, which constitutes 8.5 percent of all larvae collected (Table 2.1). Blue sucker (*Cycleptus elongatus*) were the only larvae identifiable beyond the family level. Therefore, all other sucker larvae are referred to as catostomids. Catostomids were collected from 7 May to 3 August at water temperatures ranging from 13.6 to 29.9°C (Figure 2.11). Mean daily discharge ranged from 48.1 to 987.7 m^3/second (Figure 2.12). Gizzard shad, cyprinid, *Macrhybopsis* spp., catostomid and

freshwater drum larvae were collected at varying temperatures and discharges. It is interesting that the highest numbers of cyprinids and *Macrhybopsis* spp. larvae were collected following the large (987.7 m^3/second) discharge event in 1999. Robinson et al. (1998) noted that larval stages of four native fishes in the Little Colorado River probably peaked during the descending limb of spring runoff. Cyprinids and *Macrhybopsis* spp. larvae in the Platte River were in low numbers during the discharge events and high following the event. Catostomids were highest in the drift in 1999, when the highest discharges occurred.

A total of 95 blue sucker larvae were collected from 1998 to 2003. Larvae were collected from 2 May to 3 June at water temperatures ranging from 14.9 to 23.6. Blue sucker larvae were collected during a short period of time. Because our sampling commenced the first week in May, we are not able to document larvae drifting prior to May. Blue sucker larvae are probably were drifting during the last week in April in some years. In a draft status report for blue sucker in 1993, evidence of spawning in Nebraska did not exist (Elstad and Werdon 1993). Montana was the only state on the Missouri River to have collected larval blue sucker (Elstad and Werdon 1993). In light of the little information that is known for blue sucker, it is important to note that the Platte River is suitable for spawning.0 °C (Figure 2.13). Mean daily discharge ranged from 122.0 to 438.7 m^3/second (Figure 2.12).

Larvae of channel catfish (*Ictalurus punctatus*), flathead catfish (*Pylodictus olivaris*), mosquitofish (*Gambusia affinis*), brook silversides (*Labidesthes sicculus*), *Lepomis* spp., largemouth bass (*Micropterus salmoides*), yellow perch (*Perca flavescens*), and *Stizostedion* spp. were collected between 1998 and 2003. Because these taxa, combined represent less than one percent of all larvae collected (Table 2.1), no further detail will be provided.

A total of 755 freshwater drum (*Aplodinotus grunniens*) larvae was collected from 1998 to 2003 (Table 2.1). Larvae were collected from 11 May to 3 August at water temperatures ranging from 13.6 to 29.9 °C (Figure 2.15). Mean daily discharge ranged from 48.1 to 987.7 m^3/second (Figure 2.14).

A total of 25,655 fish eggs were collected from 1998 to 2003. Eggs were collected during all sampling events, except three, at all temperatures (Figure 2.17) and discharges (Figures 2.18). There three sampling events with no eggs were 14 April 2001, 1 May 2002, and 16 May 2002.

PLAN OF WORK

We have completed all larval fish samples from 2003 and will sampling for larval fish in 2004 with the same sampling strategy as in 2003. Based on collection and radio tracking of pallid sturgeon near Louisville, Nebraska, we decided to increase sampling effort for larvae in this area. Sampling will again concentrate at U.S. Highway 6 and downstream of Louisville, Nebraska. Sites will be sampled simultaneously every three hours, beginning at 1800 hours and concluding at 0600 hours the following day. Sites are scheduled to be sampled every week during May, and every other week in June and the first half of July. If sturgeon larvae are found in samples prior to preservation with formalin, larvae will be preserved in ethanol for genetic analysis. Sampling for larval fishes will be completed for this project by mid July in 2004.

OBJECTIVE 3

APPROACH

Locations of sturgeon, sturgeon chub and associated species and the habitats they use will be related to ambient conditions in the Platte River. A relational database and a Geographic Information System (GIS) are being developed for the analysis of the spatial and temporal habitat use of pallid sturgeon and sturgeon chub in the lower Platte River. The relational database provides a single, coordinated location for the storage and management of field data being collected in the different sections of this project. The benefits of a relational database include the ability to standardize the data collection process among field studies to allow for appropriate integration of the data. Also, the database allows available data from other sources (i.e. flow data from United States Geological Survey gauge sites, or water quality data from Nebraska Department of Environmental Quality) to be incorporated with the data collected on the habitat use of the fishes. In addition, by including accurate time and location information for all data within the database, there is a built-in compatibility with GIS platforms. GIS provides the ability to visualize and analyze the spatial and temporal relationships between the many aspects of the overall project. By combining the findings from each field study, a generalized picture of the fish habitat use and movement may emerge. In addition to improving the description of suitable habitat for the pallid sturgeon and sturgeon chub, the GIS imparts a mechanism to begin to synthesize the data on general habitat availability within the lower reaches of the Platte River and allows results from the different collecting techniques to be compared.

Similarly, river discharge and other habitat parameters will be compared to the abundance of larval fishes collected in drift samples (Reade 2000). Development of habitat preference or habitat suitability criteria for sturgeon and associated species will require comparison of habitat use data collected by this research to independent data from previous PHABSIM analyses and additional information beyond the realm of this proposal.

Starting in September 2000 we measured water temperature (°C), dissolved oxygen (mg/L), conductivity (uS/cm), salinity (ppt), turbidity (NTU),and total suspended solids (mg/L) (APHA 1987) at four sites in the lower Platte basin. The locations of these sites are described in Table 3.1 and shown on Figure 3.1. The sites at Louisville and Leshara are located on the Platte River, while the sites at Greenwood and Waterloo are on Salt Creek and the Elkhorn River, respectively. These sites were sampled weekly through the fall and winter, except when ice conditions made water sampling dangerous. Five temperature-recording units were placed at the Louisville site to monitor temperature on a continuous basis.

ACCOMPLISHMENTS

WATER QUALITY MONITORING

Seven water quality parameters were measured between January 1, 2003 and December 16, 2003. Discharge from the USGS gage information for 2003 is provided in figure 3.1 for reference. The period of highest discharge was in May of 2003. Temperature maxima exceeded 30°C at all stations during 2003 and all sites experienced temperature minima of 0°C during this time period. Similar to 2002, the lowest dissolved oxygen readings occurred at Greenwood on Salt Creek. Conductivity, specific conductivity, and salinity values averaged highest at

Greenwood on Salt Creek. Total suspended solids and turbidity values averaged the highest at During May on the Elkhorn River at Waterloo. Figures 3-1 through 3-7 show recorded values for water quality parameters at each of the sampling stations during the sampling period. Each point on the graph represents the average of all the measured positions at that station on a given day. Figure 3-1 shows the average temperature at the different locations and the expected trend of warm water in the summer and cold water in the winter. The peak temperatures at all sites occurred in July and August, 2003. Numerous records of ice or temperature just above freezing were recorded at all sites during the winter months, yet the Salt Creek site had a warmer temperature profile for the winter and more open water throughout the winter was noted. It is also interesting to note the rapid warming and cooling at all sites with changes greater than 15 °C occurring in a month's time. Figure 3-2 shows the average dissolved oxygen concentrations at each location surveyed. In general, dissolved oxygen concentrations appear to average between 9 to 12 mg/L. Figures 3-3, 3-4, and 3-5 show specific conductivity, conductivity and salinity, respectively. All three water quality parameters exhibit similar trends across the sampling locations. Salt Creek, has higher salinity concentrations and consistently higher conductivity readings. The other three sites are generally stable in their overall solute concentrations. The large swings in conductivity and salinity readings in Salt Creek are probably due to large discharge events that dilute the base flow waters. Figure 3-6 shows the average total suspended solids (TSS) at the sampling locations. The TSS profiles for all locations are generally consistent with the highest suspended solids occurring during the spring months.

Water quality monitoring within the lower Platte River Basin has shown that water quality is most similar among Platte River sites and the Elkhorn River. The condition of the

water in Salt Creek is substantially different than that of the main Platte River. Differences in the water quality are directly related to the physico-chemical properties of the lands upstream of the sampling stations. Salt Creek, as the name implies, drains an area noted for its unique salt marshes. Much of the rest of the Platte River Basin and the Elkhorn River Basin drain the Sandhills region of western and northern Nebraska. Salt Creek is also highly modified by channelization and has levees forming its banks for much of its length. The Elkhorn River, while also modified in many areas, has a much wider river bed and flood plain associated with its lower reaches. Given the shallow, turbid nature of the lower Platte River and its tributaries, it is not surprising that there are rapid fluctuations in water temperature. Additionally, the large inputs of suspended sediments in the spring coincide with planting season in the predominantly agricultural watershed. Snowmelt runoff and the spring rains move substantial amounts of fine sediment from the fields into the streams and rivers.

To better understand the forces driving the changes in the water quality parameters, it will be important to integrate the information collected in this study with land use data and river discharge data available through the U. S. Geological Survey. As we develop a better understanding of the changing condition of the water as it flows over and through the lands and down the waterways of the lower Platte River Basin, we may be able to predict more accurately the effect various management practices have on the native fish populations of the Platte River and overall basin ecosystem in general.

DATA BASE DEVELOPMENT

The framework for a relational database has been developed for Microsoft Access. The

major study components currently included within the overall database are: telemetry study, larval fishes study, creel survey, water quality monitoring, USGS flow data, grid electroshocking data, IFIM random habitat data. Additionally, spatial location information on the river, reach and site is included, as is information on the different fish species found within the lower Platte River. Currently data have been completely entered for the spatial location information in the River, Reach, and Site tables, the Habitat Type tables, and the Species Information tables. The species information table was developed using the coding system compatible with Nebraska Game and Park Commission's WinFin software. The larval fish database has 7,326 records entered. The telemetry study has 1,609 records entered and includes both wild and hatchery-reared pallid sturgeon data and shovelnose sturgeon data. 865 records for individual sturgeon and their morphometrics have been entered. There are 185 trotlines entered and 418 drifted trammel or gill nets entered. The benthic fish sampling has 4923 records entered. The water quality monitoring is complete up to March of 2003. The Creel study is complete for 2002 and 2003. Data associated with past collection efforts on the lower Platte River includes 13,285 fish from grid electroshocking. Habitat availability data from NPGC IFIM study have also been converted into a usable format. Additional data entry will continue in 2004 as needed to complete the integration of past and current data collections into the database.

GIS

The development of the database is the first important step in creating a functional GIS for the lower Platte River Project. Past activities in the GIS portion of this project have focused on data acquisition and conversion. In 2003, the GIS portion focused on the delineation of instream habitat for section of the lower Platte River. Habitat types visible on digital

orthoquadrangles (DOQ's) taken in 1998 and 1993 were classified into one of five categories (woody island, weedy islands, exposed sandbars, shallow sandbars, open water). Classification is complete for approximately 350 km of river for the 1993 and 1998 DOQ's. Current flow conditions associated with the images were retrieved from the USGS flow data on the Platte river to allow quantification of the available habitat with respect to flow conditions. In August of 2002, 245 high-resolution digital images of the lower Platte River were taken from an airplane. These images taken during the drought are being mosaiced together into several kilometer sections of the river. These images were also classified comparable with the techniques used for the DOQ's. The section from the mouth of the Missouri River to the Highway 75 bridge, the section of the river near South Bend, near Ashland, and near Columbus have been completed. The classified images were divided into sections around the nearest USGS gage site and we have 24 different flows represented from 0 m^3/s to 595 m^3/s to use to understand the changes in habitats with respect to flow. Table 3.1 provides the locations and sizes of the river sections classified, and Table 3.2 show the quantity of the habitat types and total area classified in all of the sections. Relationships were developed for discharge to exposed sandbars (figure 3.9), discharge to shallow sandbar complexes (figure 3.10), and discharge to open water (figure 3.11). Figure 3.12 shows the area standardized results of the habitat availability to discharge relationships.

The GIS was also used to calculate the movement of sturgeon in the telemetry part of this research project. The data points for all of the fish locations were plotted on the images of the river and were used to determine the distance moved between each observation. Additionally, all

of the data associated with fish sampling included in the database has been plotted on the images of the river.

PLAN OF WORK

Fish collection, sturgeon telemetry, larval fish collection, creel survey, and water quality data through 2004 will be entered as analyses proceed. The classification is near complete and analysis of the affect of river discharge on habitat availability will continue. Additionally, the effect of discharge on the connectivity of the river will also be assessed. Additional work on the mapping of sturgeon telemetry data onto the model of the river to assess movement patterns will continue.

OBJECTIVE 4

APPROACH

This objective is being accomplished by conducting a focused creel survey in the Platte River approximately from the Ak-Sar-Ben aquarium downstream to the mouth of the Platte. Emphasis is being placed in the area near the Shilling Wildlife Management Area. From previous sampling we know that sturgeon fishers congregate in this area of the river (Holland and Peters 1994). The creel surveys followed a stratified multi-stage probability sampling regime designed using Win Fin the computer programs produced by the Nebraska Game and Parks Commission. The river is being surveyed monthly between March and June. A total goal of 10 survey days is being performed each month, with the number of creel days per month stratified between weekdays and weekends/holidays. Each creel day is being further stratified into four time periods and count times are randomized within these time periods. During each count the creel clerk records the number of bank anglers, boats and boat anglers present. Clerks interview anglers to collect information on fishing effort, number and type of fish captured and harvested, and all sturgeon in the creel are being examined and barbel clips are being collected. This is a primary way of obtaining tissue specimens for DNA analysis of the genetic makeup of the sturgeon population in lower Platte. In addition, each angler is asked to identify photos of pallid and shovelnose sturgeon. The creel survey also ties to the development of educational materials for anglers and the general public by providing a venue to test these materials (Objective 5).

ACCOMPLISHMENTS

The creel survey commenced on April 1, 2002 and concluded on May 31, 2002 and on April 1, 2003 and completed on May 31, 2003. Anglers who are selecting to fish for sturgeon

are being asked to complete monthly fishing diaries to supplement information we acquire through regular surveys.

In 2002, a total of 97 anglers were interviewed to determine what anglers in the lower Platte River are fishing for. A little over 20% of anglers interviewed were fishing for sturgeon. Sturgon anglers had an average catch rate of 0.15 sturgeon/hour, while non-sturgeon targeting anglers had a catch rate of 0.10 sturgeon/hour. Fourty-eight percent of all sturgeon captured were released. Data from anglers interviewed at each site in the lower Platte River is summarized in Table 4-1.

In 2003, 80 anglers were interview by a creel clerk. The sturgeon anglers had a much higher catch rate (0.27 sturgeon/hour) than non-sturgeon targeting anglers (0.07 sturgeon/hour). Overall, there was a decrease in the sturgeon catch near Schramm Park, and conflicts between anglers and local land owners was likely the cause for the decrease in fishing effort and catch.

To determine if anglers can correctly identify a pallid sturgeon a picture of a shovelnose and pallid sturgeon were shown. In 2002, anglers fishing for sturgeon responded correctly 86% of the time. Non-sturgeon anglers correctly responded 55% of the time. In 2003, the sturgeon anglers continued to score well on the fish identification quiz (86% correct) and non-sturgeon anglers correctly responded 64% of the time.

This information has yet to be scaled up for the total fishing effort, in terms of days and all observed anglers, for the lower Platte River.

PLAN OF WORK

The 2004 creel survey will commence April 1, 2004 and conclude May 31, 2004 with 12

days per month surveyed. An updated flyer will be designed and given out to the fisherman along the lower Platte River. Data from each of the survey years (2002, 2003, and 2004) will be compiled and summarized to provide an overall picture of the sturgeon fishery on the lower Platte River.

OBJECTIVE 5

APPROACH

The development of educational materials is crucial to the management of the sturgeon fishery. If anglers are not able to accurately identify endangered pallid sturgeon that they catch, the whole sturgeon fishery may need to be curtailed. Intensive efforts will be made to contact sturgeon fishers and to provide them with regular information about our study of pallid sturgeon and sturgeon chub. Regular workshops, educational programs, and news releases will be directed to local news media to keep the general public informed about our studies and findings.

We plan to build on the ideas developed by Sheehan, et al. (1999) to produce field identification aids for anglers. As data become available we will also provide recommendations for development of management plans.

ACCOMPLISHMENTS

The informational flyer was updated to alert anglers to the presence of radio tagged fish in the population. These were distributed through the creel survey and by casual contacts with anglers. Signs were printed to inform anglers about our activities and the presence of radio tagged sturgeon in the Platte River and adjacent reaches of the Missouri River and these were posted at all public access points along the lower Platte River. Both of these public relations efforts are being coordinated with the Nebraska Game and Parks Commission. Presentations of preliminary results have been given at the Midwest Fisheries Conference in Kansas City, MO, and at the annual meeting of the Nebraska Chapter of the American Fisheries Society.

PLAN OF WORK

Work is continuing to inform anglers and the general public about the on-going work on sturgeon in the lower Platte River. News releases and radio tapes are planned for regular intervals through the fall and especially during the late winter before sturgeon fishing commences. Additional abstracts being submitted for the Midwest Fish and Wildlife Conference and the World Fisheries Congress.

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Table 1.1. Entanglement gear effort and catch from 2000 to 2003

Method	2000	2001	2002	2003	Total
Drifted Trammel Net	0	0	16	122	138
Drifted Gill Net	63	102	156	0	321
Species					
Scaphirhynchus albus	0	0	1	0	1
Scaphirhynchus platorynchus	100	185	223	357	865
Polyodon spathula	1	1	3	2	7
Lepisosteus osseus	3	16	28	12	59
Lepisosteus platostomus	37	34	44	77	192
Hiodon alosoides	38	80	110	133	361
Dorosoma cepedianum	31	2	15	9	57
Ctenopharyngodon idella	0	1	1	7	9
Cyprinus carpio	10	9	5	25	49
Hypophthalmicthys nobilis	0	1	1	25	27
Carpiodes carpio	13	9	24	76	122
Carpiodes cyprinus	5	17	61	206	289
Cycleptus elongatus	5	3	6	9	23
Ictiobus bubalus	2	1	5	8	16
Ictiobus cyprinellus	1	4	3	10	18
Moxostoma macrolepidotum	0	1	5	7	13
Ictalurus furcatus	0	0	0	1	1
Ictalurus punctatus	7	8	15	29	59
Pylodictis olivaris	1	0	1	1	3
Morone chrysops	0	0	2	0	2
Morone chrysops x Morone saxatilis	1	0	1	0	2
Pomoxis annularis	0	0	0	1	1
Pomoxis nigromaculatus	0	0	1	1	2
Stizostedion spp.	0	0	1	1	2
Stizostedion canadense	2	0	4	14	20
Stizostedion vitreum	0	1	3	7	11
Aplodinotus grunniens	6	0	6	9	21

Table 1.2. Stationary Gill Net effort and catch from 2001 to 2003.

	2001	2002	2003	Total
Stationary Gill Net sets	2	3	1	6
Species				
Lepisosteus osseus	0	1	0	1
Lepisosteus platostomus	0	3	0	3
Hiodon alosoides	0	1	0	1
Cyprinus carpio	0	3	0	3
Carpiodes carpio	1	1	0	2
Carpiodes cyprinus	0	1	0	1
Ictalurus punctatus	0	1	0	1
Stizostedion canadense	0	1	0	1
Aplodinotus grunniens	0	1	0	1

Table 1.3. Trotline effort and catch from 2001 to 2003.

Method	2001	2002	2003	Total
Trotline	45	34	74	153
Species				
Scaphirhynchus albus	1	0	1	2
Scaphirhynchus platorynchus	55	45	82	182
Cyprinus carpio	1	1	1	3
Ictalurus punctatus	3	0	0	3

Table 1.4. Sturgeon telemetry type and effort from 1998 to 2003.

Species	Survey	1998	1999	2000	2001	2002	2003	Total
Scaphirhynchus albus	boat	134	124	2	11	7	17	295
Scaphirhynchus albus	airplane	137	0	0	3	2	3	144
Scaphirhynchus platorynchus	boat	0	0	79	188	268	164	700
Scaphirhynchus platorynchus	airplane	0	0	50	184	130	72	436

Table 1.5. Summary of fish implanted with radio-transmitters.

[a] The transmitter carried by this individual was dropped, recovered and later implanted into a different shovelnose.

[b] These fish were recaptured and implanted with new transmitters prior to the expiration date of the original transmitter.

Transmitter frequency	Species	Fork length (mm)	Weight (kg)	Date captured	Date of last location	Aerial Contacts	Airboat Contacts	Final Status
49.021[a]	*S. platorynchus*	598	0.82	7/2/2000	7/11/2000	0	0	dropped
49.021/341[b]	*S. platorynchus*	588	0.75	7/18/2000	5/20/2002	38	35	expired/lost
49.041	*S. platorynchus*	601	0.79	8/1/2000	8/31/2000	0	0	dropped
49.061	*S. platorynchus*	605	0.83	7/6/2000	8/29/2000	0	0	dropped
49.081	*S. platorynchus*	574	0.78	8/17/2000	11/15/2001	30	25	expired
49.101/111[b]	*S. platorynchus*	636	0.91	8/10/2000	6/19/2002	46	40	expired
49.121	*S. platorynchus*	569	0.82	8/17/2000	10/3/2001	20	23	expired
49.161	*S. platorynchus*	615	0.85	8/2/2000	10/16/2001	31	29	expired
49.181	*S. platorynchus*	605	0.8	7/17/2000	8/31/2000	0	5	dropped
49.201/401[b]	*S. platorynchus*	610	0.85	8/10/2000	11/12/2002	55	56	expired
49.241/361[b]	*S. platorynchus*	626	0.8	4/5/2002	7/7//2003	30	33	at large/MR
49.281	*S. platorynchus*	585	0.81	4/5/2002	6/30//2003	32	33	expired
49.301	*S. platorynchus*	619	0.94	3/28/2002	1/6/2003	22	32	expired
49.381	*S. platorynchus*	560	0.77	10/4/2001	10/23/2002	21	27	expired/MR
49.501	*S. platorynchus*	620	1	8/24/2000	11/6/2001	17	21	expired
49.521	*S. platorynchus*	628	1.05	5/23/2001	4/9/2002	18	25	expired/lost
49.621	*S. albus*	880	2.45	5/3/2001	6/9/2001	2	10	expired/MR
49.641	*S. platorynchus*	693	1.25	8/17/2000	10/30/2001	15	23	expired
49.661	*S. platorynchus*	642	0.97	10/8/2001	5/20/2001	13	11	expired/lost
49.721	*S. albus*	1,030	4.1	5/23/2002	5/30/2002	1	7	at large/MR
49.821	*S. platorynchus*	638	0.9	5/3/2002	9/24/2002	4	6	at large/MR
49.841	*S. platorynchus*	637	1.06	5/1/2002	6/5/2002	4	5	dropped

Table 1.5 (continued). Summary of fish implanted with radio-transmitters.

Transmitter frequency	Species	Fork length (mm)	Weight (kg)	Date captured	Date of last location	Aerial Contacts	Airboat Contacts	Final Status
49.261	*S. platorynchus*	590	0.80	5/28/2003	7/14/2003	1	3	at large
49.341	*S. platorynchus*	628	0.90	5/27/2003	8/7/2003	5	13	at large/MR
49.542	*S. albus*	788	1.80	4/3/2003	4/26/2003	2	17	at large/MR
49.581	*S. platorynchus*	644	0.90	4/2/2003	11/13/2003	15	47	at large/MR
49.602	*S. platorynchus*	655	1.00	5/22/2003	11/13/2003	15	46	at large
49.701	*S. platorynchus*	619	0.95	5/27/2003	6/3/2003	1	0	lost
49.761	*S. platorynchus*	606	0.95	6/3/2003	10/17/2003	8	30	at large
49.882	*S. platorynchus*	650	1.10	5/27/2003	5/27/2003	0	0	lost

Table 1.6 Trawl run effort and catch from 2001 to 2003.

	2001	2002	2003	Total
Number of trawl runs	9	93	11	113
Species				
Scaphirhynchus platorynchus	1	26	0	27
Macrhybopsis aestivalis	3	1909	2	1914
Macrhybopsis gelida	0	2	0	2
Macrhybopsis storeriana	0	109	0	109
Platygobio gracilis	1	6	0	7
Cyprinidae sp.	0	0	1	1
Cyprinella lutrensis	129	89	0	218
Notropis atherinoides	1	8	0	9
Notropis blennius	9	1192	10	1211
Notropis dorsalis	0	2	0	2
Notropis ludibundus	0	2822	12	2834
Hybognathus argyritis	0	1	0	1
Hybognathus hankinsoni	0	1	0	1
Hybognathus placitus	0	47	0	47
Phenacobius mirabilis	0	6	0	6
Pimephales promelas	0	2	0	2
Carpiodes carpio	0	46	0	46
Carpiodes cyprinus	0	5	0	5
Cycleptus elongatus	0	3	0	3
Ictalurus furcatus	0	3	0	3
Ictalurus punctatus	1	1122	7	1130
Pylodictis olivaris	0	3	0	3
Morone americana	0	2	0	2
Lepomis cyanellus	0	1	0	1
Lepomis macrochirus	1	1	0	2
Etheostoma nigrum	0	2	0	2
Stizostedion sp.	0	1	0	1
Stizostedion canadense	0	1	0	1
Aplodinotus grunniens	0	40	0	40

Table 1.7. Minnow trap effort and catch from 2002 to 2003.

		2002	2003	Total
	Number of Minnnow Trap sets	172	135	307
Genus	Species			
Macrhybopsis	*Macrhybopsis aestivalis*	4	5	9
Cyprinella	*Cyprinella lutrensis*	13	4	17
Notropis	*Notropis blennius*	4	1	5
Notropis	*Notropis stramineus*	0	1	1
Pimephales	*Pimephales promelas*	0	1	1
Ictalurus	*Ictalurus punctatus*	92	71	163
Pylodictis	*Pylodictis olivaris*	2	0	2
Noturus	*Noturus flavus*	1	0	1
Lepomis	*Lepomis cyanellus*	1	0	1
Lepomis	unknown	1	0	1
Aplodinotus	*Aplodinotus grunniens*	2	0	2

Table 1.8. Seine haul effort and catch from 1998 to 2003.

			1998	1999	2000	2001	2002	2003	Total
		Number of Seine Hauls	19	5	21	72	102	58	277
Family	Genus	Species							
Asipenseridae	Scaphirhynchus	*Scaphirhynchus platorynchus*	0	0	0	1	6	0	7
Lepisosteidae	Lepisosteus	*Lepisosteus osseus*	0	0	0	1	1	0	2
Hiodontidae	Hiodon	*Hiodon alosoides*	0	0	0	0	1	1	2
Clupeidae	Dorosoma	*Dorosoma cepedianum*	3	10	0	12	19	53	97
Cyprinidae	unknown	unknown	62	90	32	39	12	0	235
Cyprinidae	Macrhybopsis	unknown	4	0	0	27	2	0	33
Cyprinidae	Macrhybopsis	*Macrhybopsis aestivalis*	2	0	0	26	147	14	189
Cyprinidae	Macrhybopsis	*Macrhybopsis hyostoma*	14	1	3	8	3	0	29
Cyprinidae	Macrhybopsis	*Macrhybopsis storeriana*	0	7	0	54	84	26	171
Cyprinidae	Platygobio	*Platygobio gracilis*	0	0	0	7	1	0	8
Cyprinidae	Semotilus	*Semotilus atromaculatus*	5	0	0	0	1	0	6
Cyprinidae	Cyprinella	unknown	1	0	1	0	0	0	2
Cyprinidae	Cyprinella	*Cyprinella lutrensis*	1967	54	48	235	1679	1705	5688
Cyprinidae	Notropis	unknown	0	1	0	0	31	0	32
Cyprinidae	Notropis	*Notropis atherinoides*	73	0	11	50	56	59	249
Cyprinidae	Notropis	*Notropis blennius*	35	16	12	82	442	54	641
Cyprinidae	Notropis	*Notropis ludibundus*	33	1	7	37	481	136	695
Cyprinidae	Hybognathus	unknown	1	52	1	8	1	4	67
Cyprinidae	Hybognathus	*Hybognathus hankinsoni*	0	0	0	0	15	0	15
Cyprinidae	Hybognathus	*Hybognathus placitus*	95	68	7	28	5	19	222
Cyprinidae	Hybognathus	*Hybognathus argyritis*	0	0	0	1	0	0	1
Cyprinidae	Pimephales	*Pimephales promelas*	33	3	2	10	7	1	56
Cyprinidae	Phenacobius	*Phenacobius mirabilis*	0	0	0	4	0	0	4

Table 1.8 (continued).

			1998	1999	2000	2001	2002	2003	Total
		Number of Seine Hauls	19	5	21	72	102	58	277
Family	Genus	Species							
Cyprinidae	Cyprinus	*Cyprinus carpio*	1	0	0	58	1	2	62
Catostomidae	unknown	unknown	0	0	0	1	0	0	1
Catostomidae	Carpiodes	unknown	46	10	7	27	21	2	113
Catostomidae	Carpiodes	*Carpiodes carpio*	5	0	3	14	51	16	89
Catostomidae	Carpiodes	*Carpiodes cyprinus*	1	0	2	3	8	16	30
Catostomidae	Ictiobus	*Ictiobus cyprinellus*	0	0	0	2	0	0	2
Catostomidae	Moxostoma	*Moxostoma macrolepidotum*	122	0	0	0	0	0	122
Ictaluridae	Ictalurus	*Ictalurus punctatus*	6	2	3	15	260	13	299
Poeciliidae	Gambusia	*Gambusia affinis*	0	0	0	0	2	0	2
Atherinidae	Labidesthes	*Labidesthes sicculus*	7	2	3	10	5	8	35
Centrarchidae	Lepomis	unknown	0	0	0	1	6	0	7
Centrarchidae	Lepomis	*Lepomis cyanellus*	0	0	0	3	0	0	3
Centrarchidae	Lepomis	*Lepomis macrochirus*	0	3	0	4	2	0	9
Centrarchidae	Micropterus	*Micropterus salmoides*	1	0	0	2	1	1	5
Centrarchidae	Pomoxis	*Pomoxis annularis*	0	1	0	6	1	0	8
Percidae	Etheostoma	*Etheostoma nigrum*	0	0	0	0	2	0	2
Sciaenidae	Aplodinotus	*Aplodinotus grunniens*	1	0	0	11	23	0	35

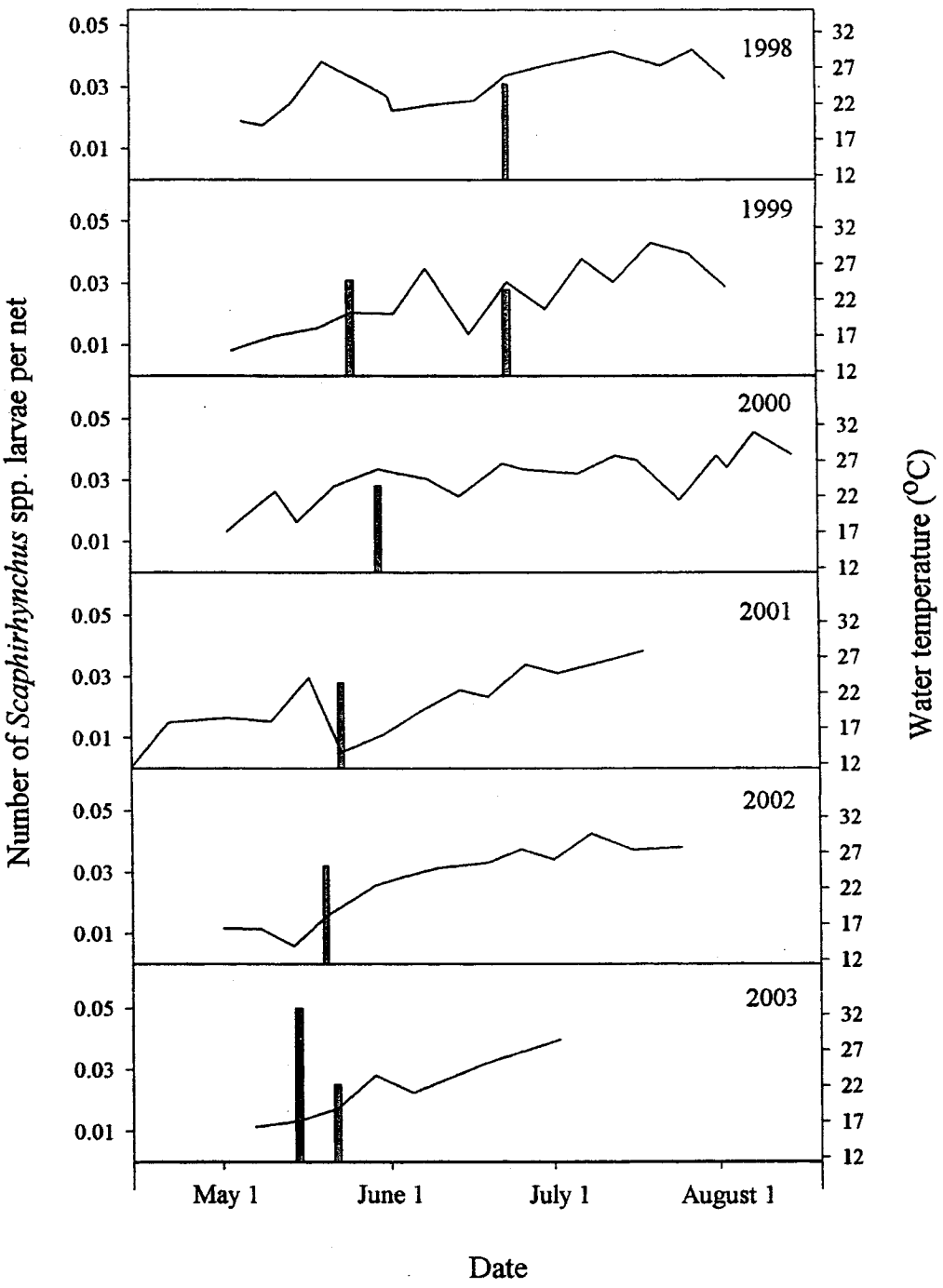

Figure 2.1. Number of *Scaphirhynchus* spp. larvae per net (▓) and water temperature (—) from 1998 through 2003.

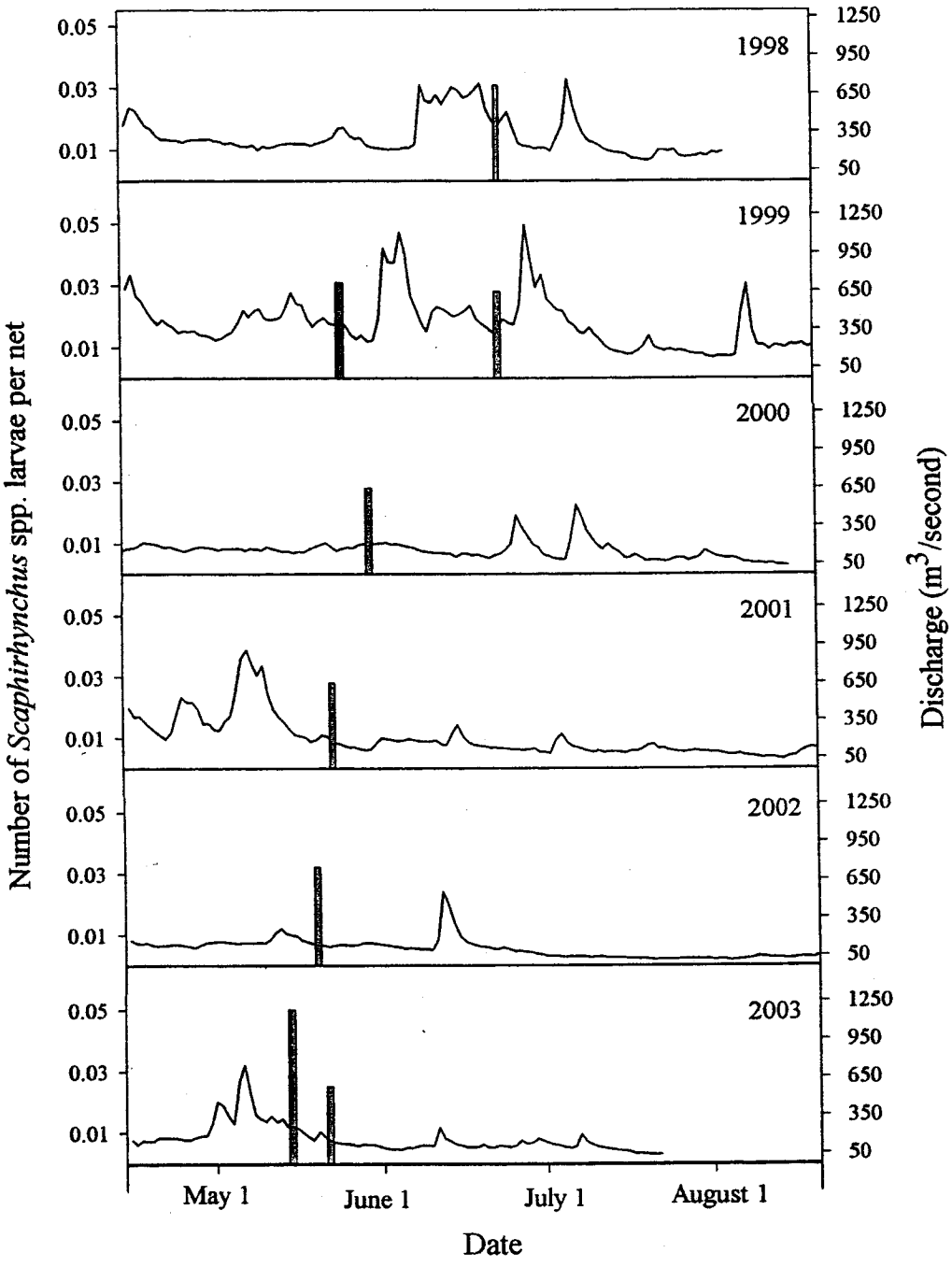

Figure 2.2. Number of *Scaphirhynchus* spp. larvae per net (▬) and mean daily discharge (——) from 1998 through 2003.

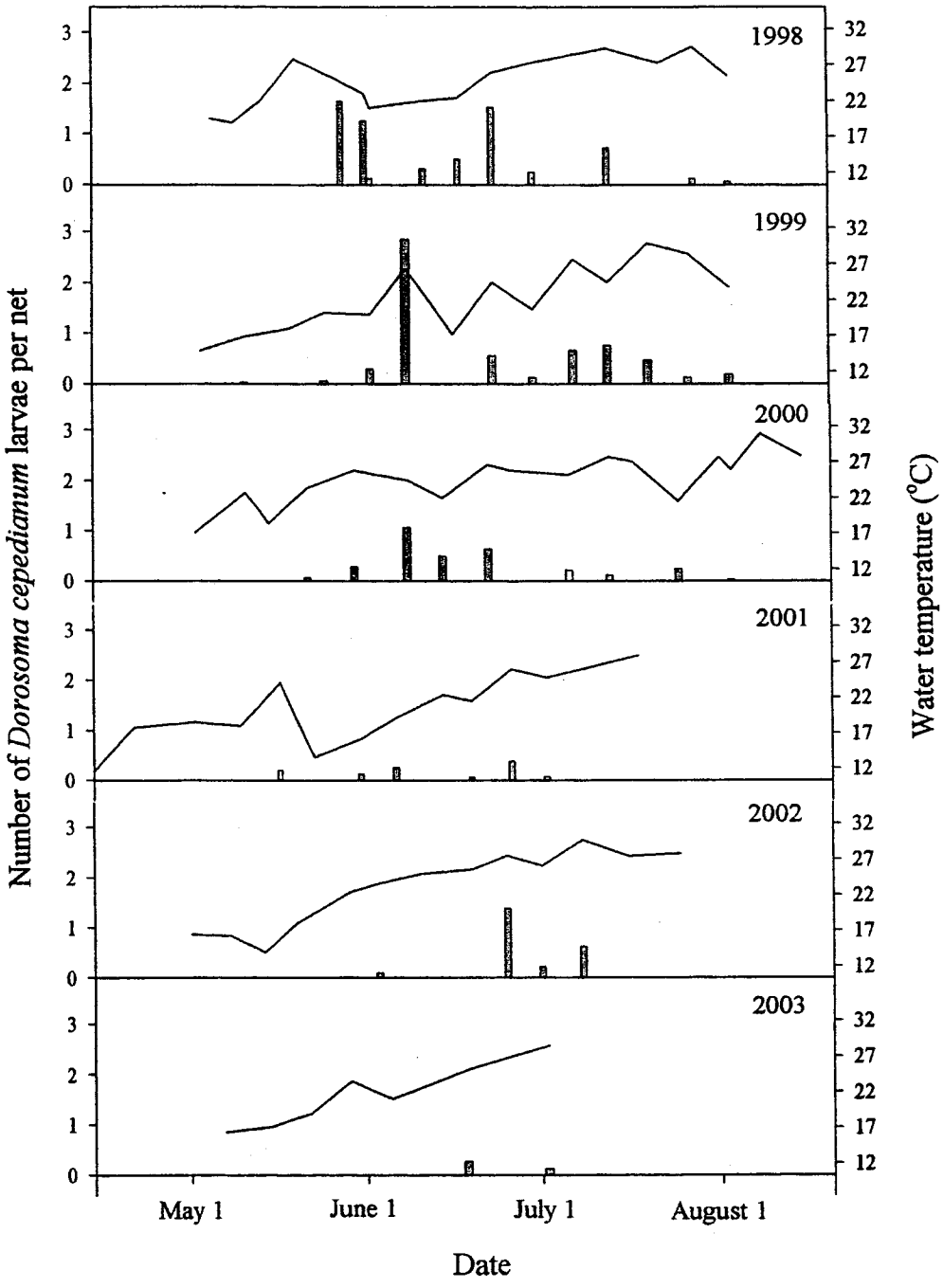

Figure 2.3. Number of *Dorosoma cepedianum* larvae per net (▓▓) and water temperature (——) from 1998 through 2003.

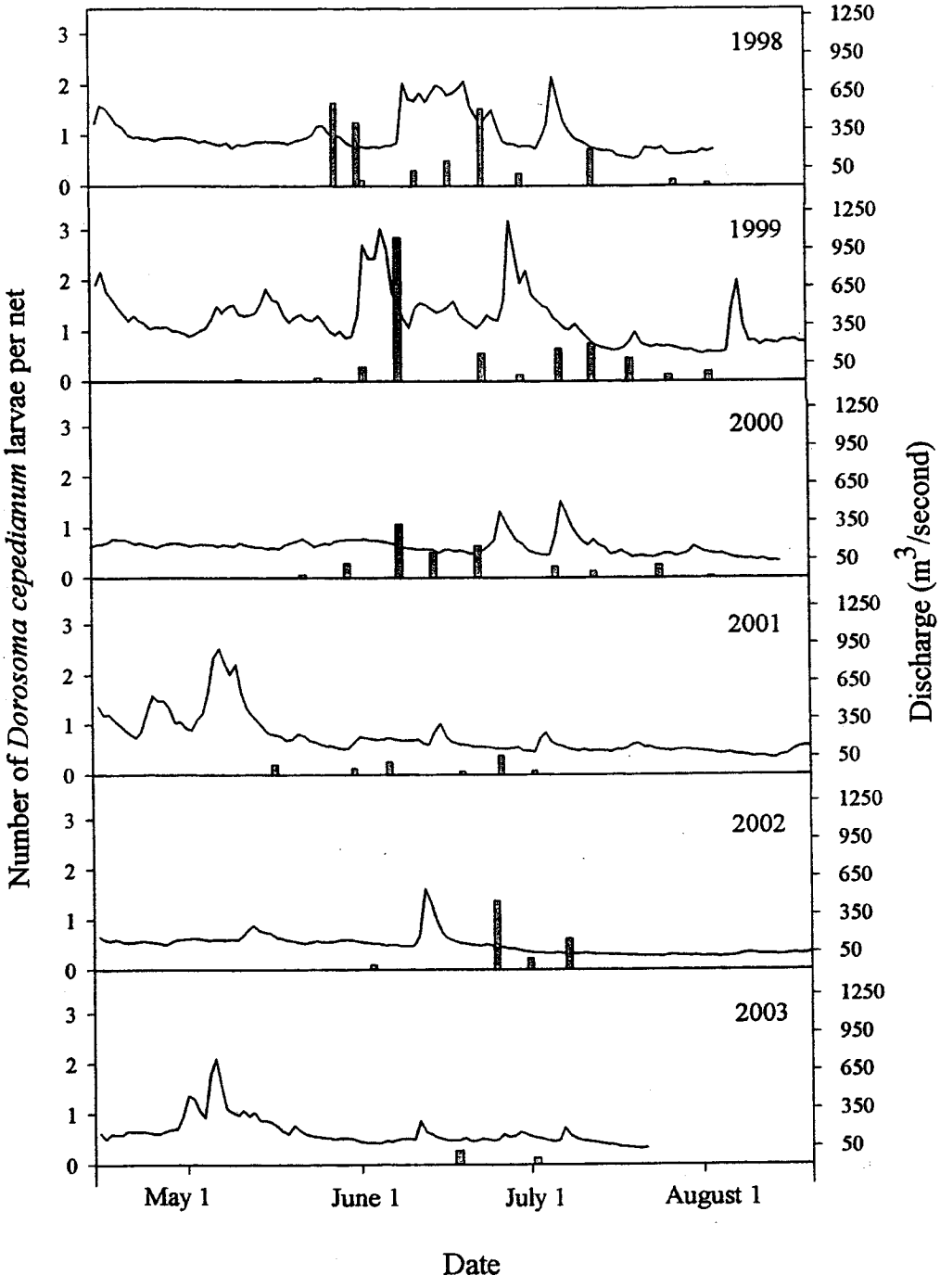

Figure 2.4. Number of *Dorosoma cepedianum* larvae per net (▭) and mean daily discharge (—) from 1998 through 2003.

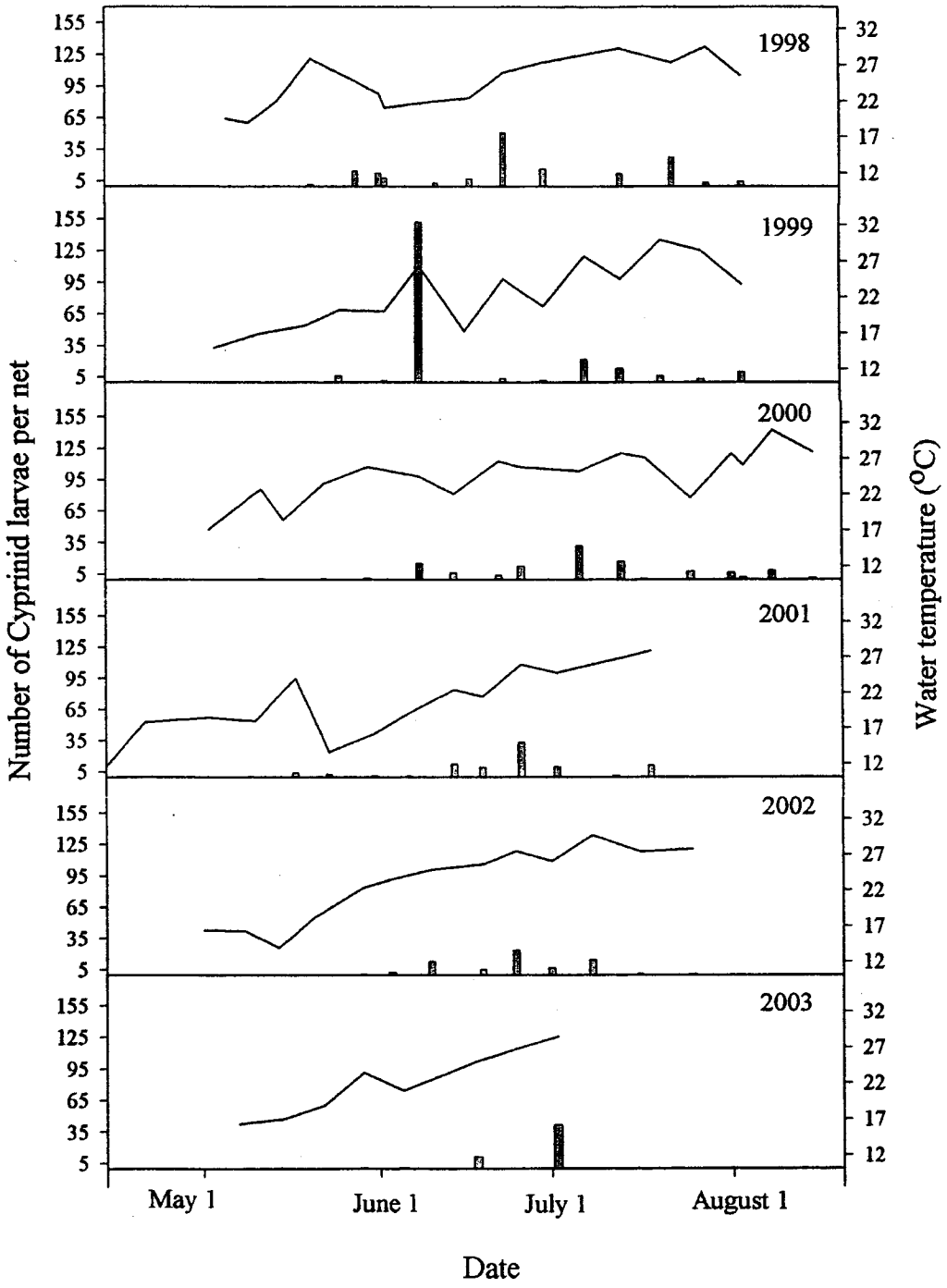

Figure 2.5. Number of Cyprinid larvae per net (▭) and water temperature (——) from 1998 through 2003.

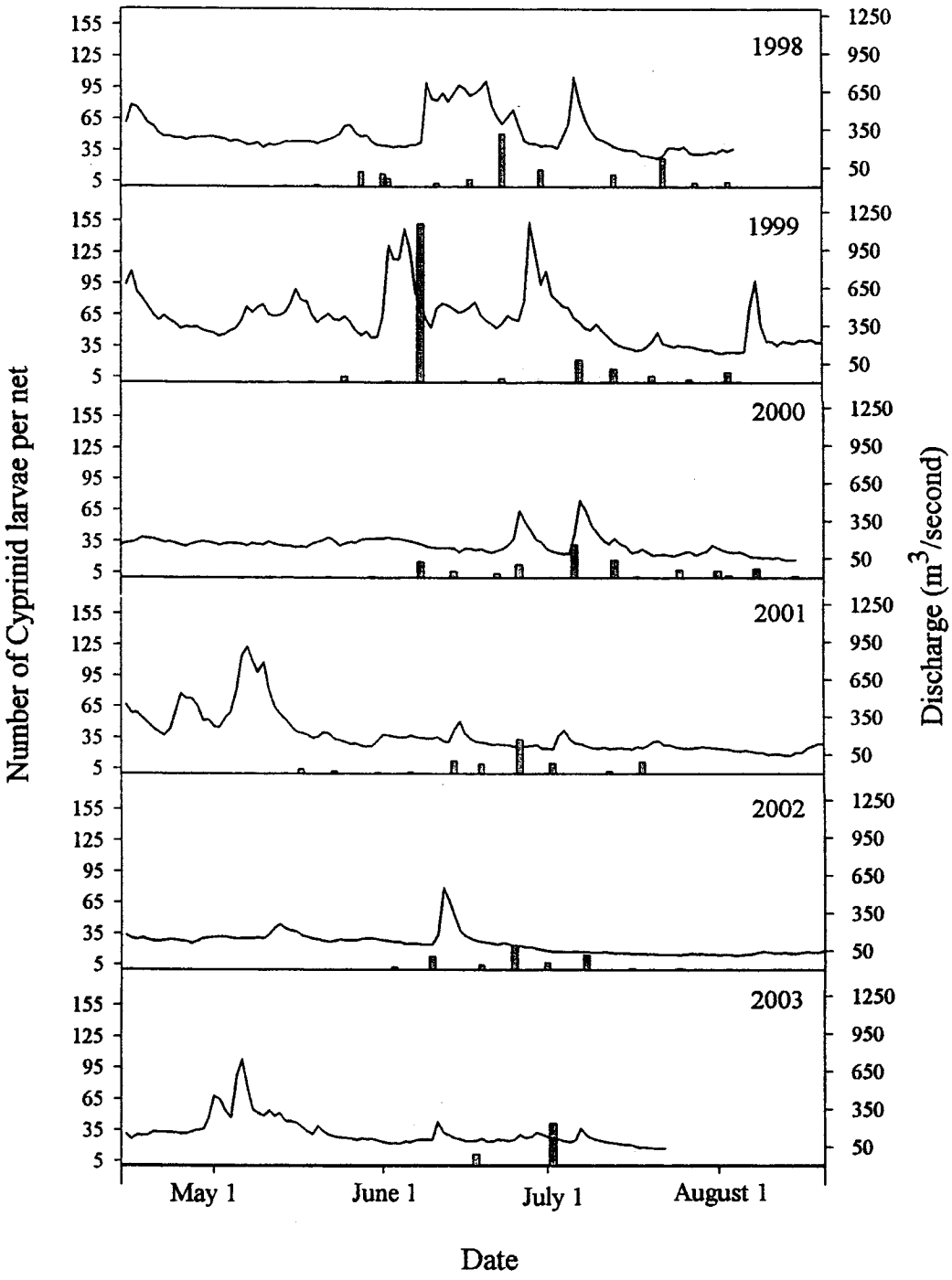

Figure 2.6. Number of Cyprinid larvae per net ( ) and mean daily discharge (—) from 1998 through 2003.

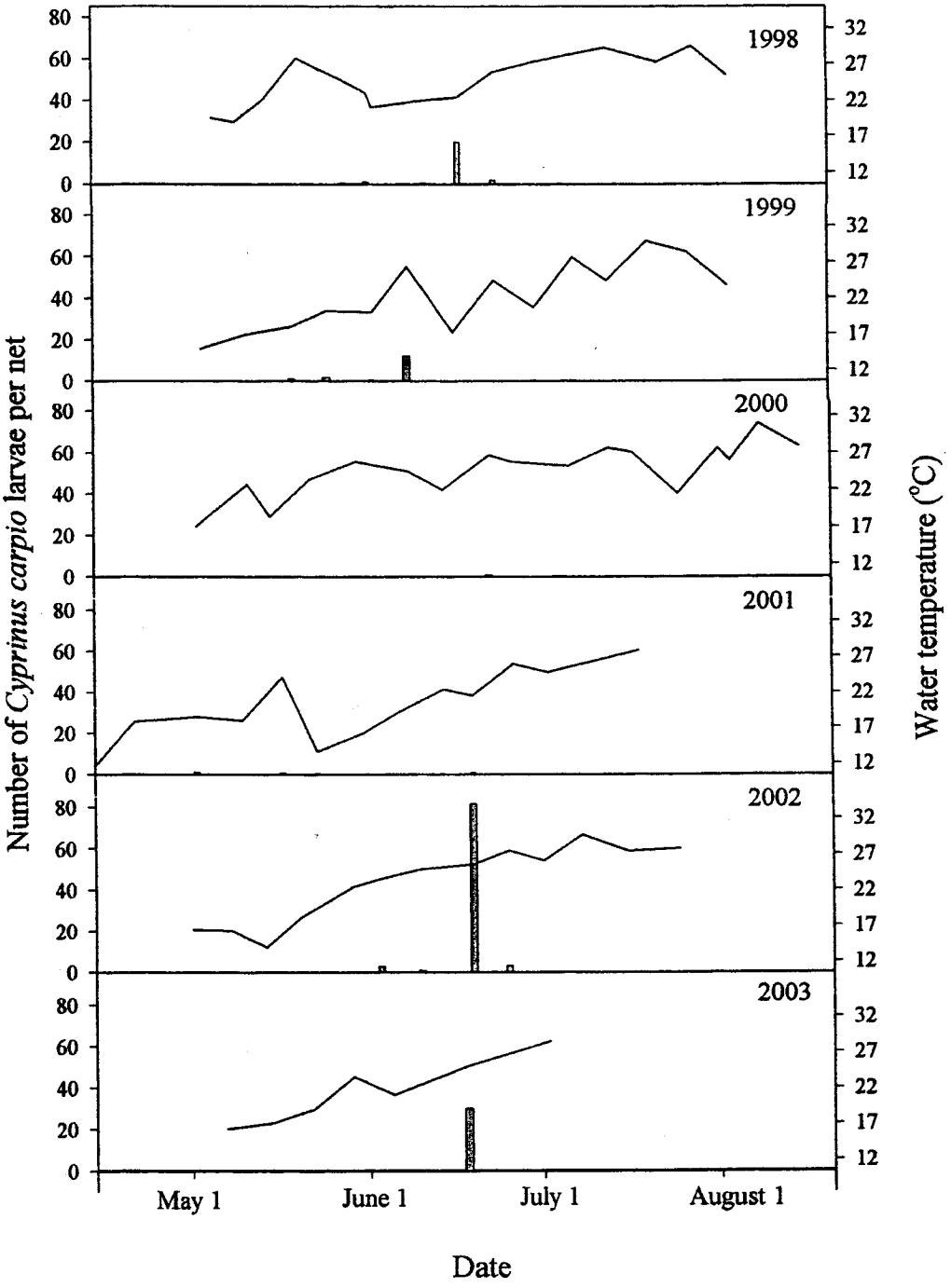

Figure 2.7. Number of *Cyprinus carpio* larvae per net (▬) and water temperature (—) from 1998 through 2003.

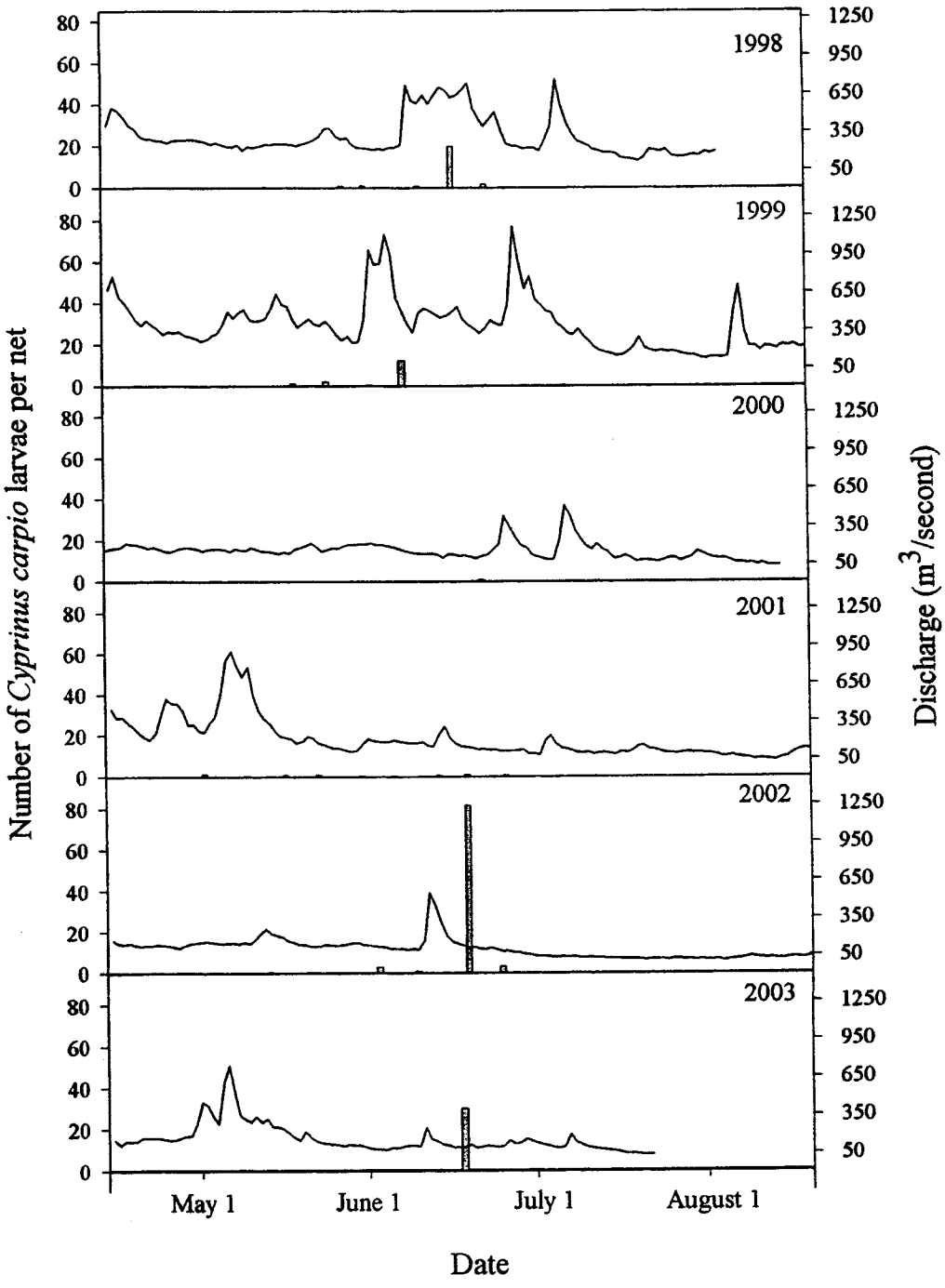

Figure 2.8. Number of *Cyprinus carpio* larvae per net (▬) and mean daily discharge (—) from 1998 through 2003.

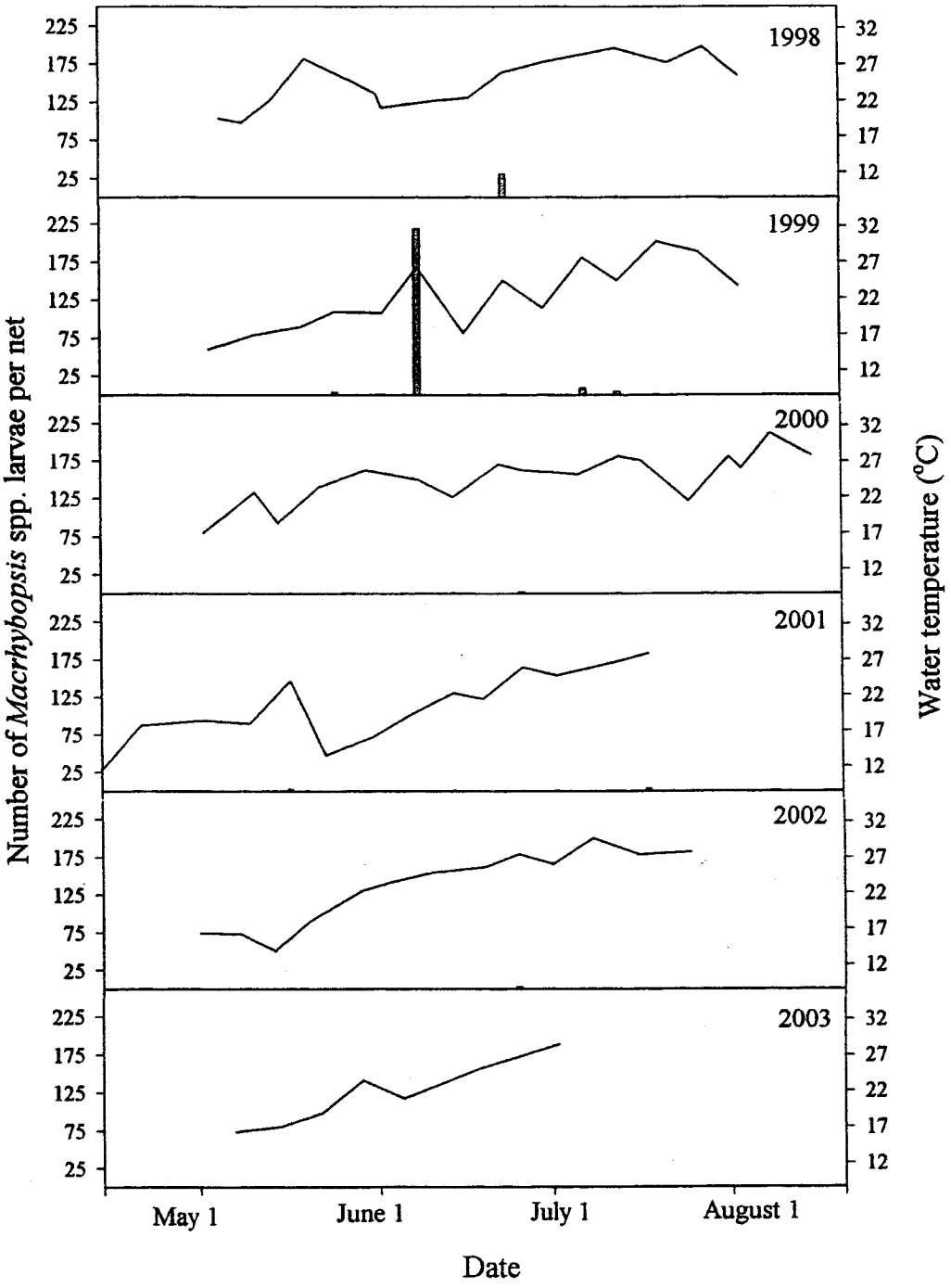

Figure 2.9. Number of *Macrhybopsis* spp. larvae per net (▬) and water temperature (—) from 1998 through 2003.

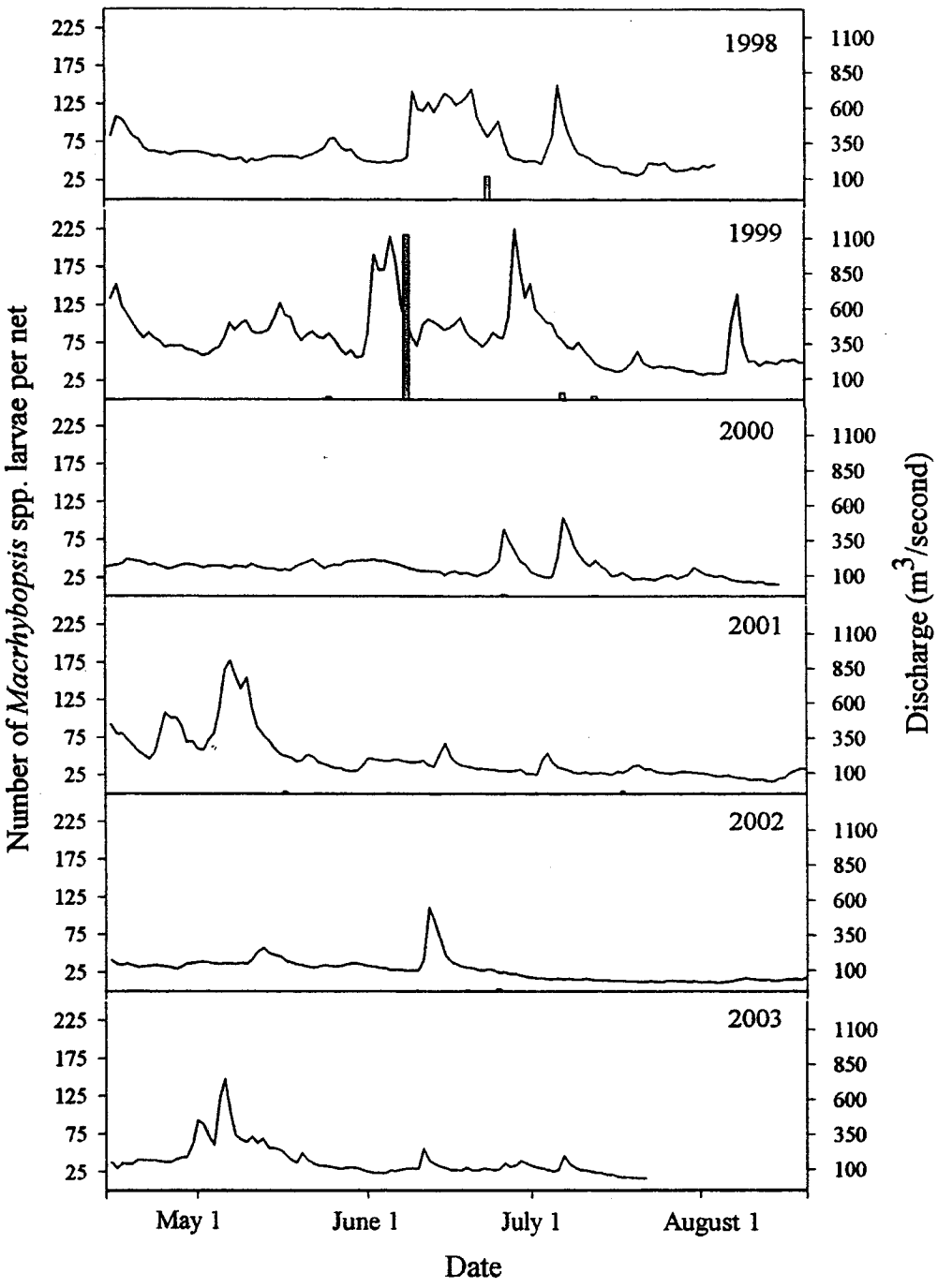

Figure 2.10. Number of *Macrhybopsis* spp. larvae per net (▬) and mean daily discharge (—) from 1998 through 2003.

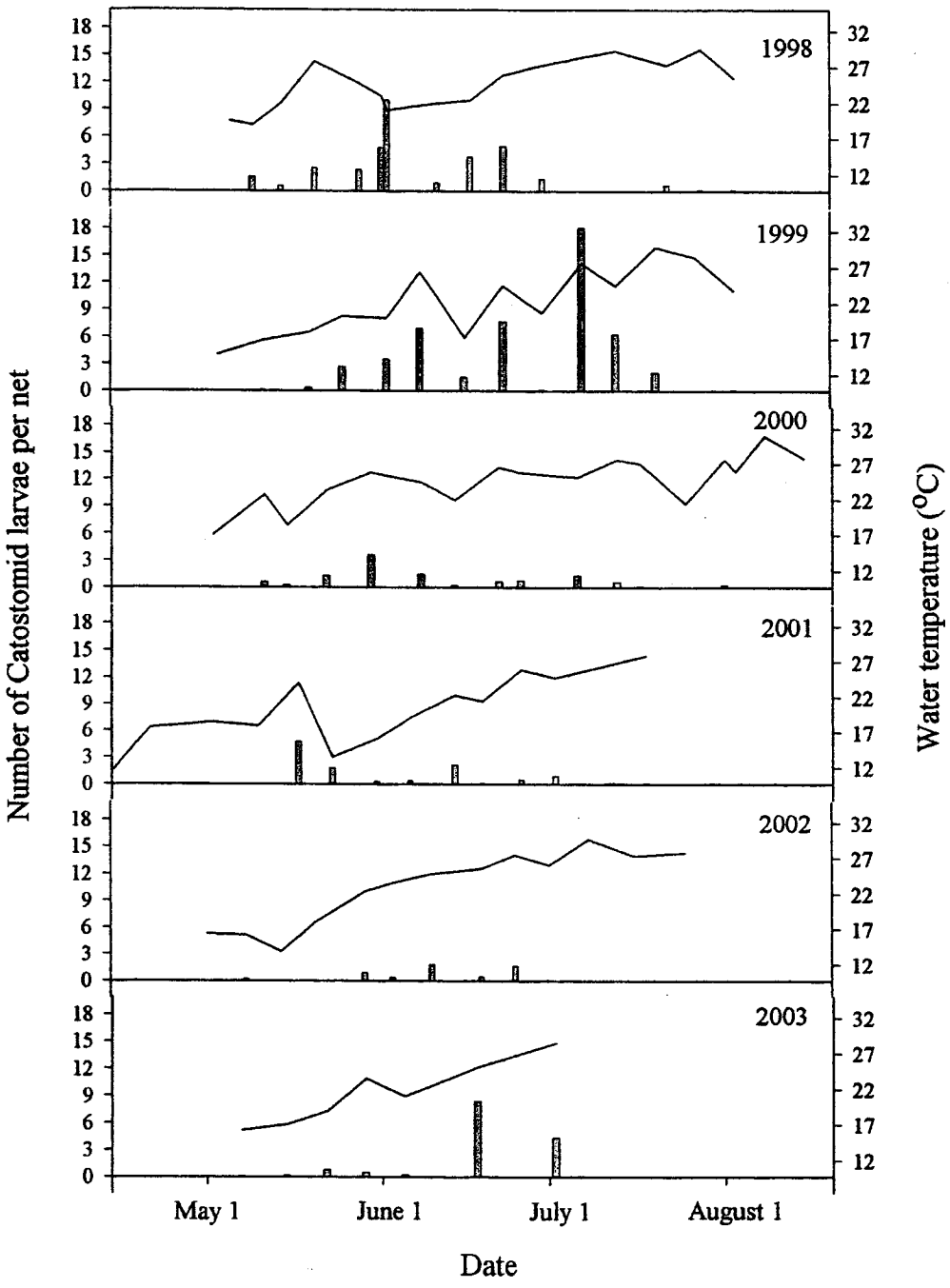

Figure 2.11. Number of Catostomid larvae per net (▬) and water temperature (—) from 1998 through 2003.

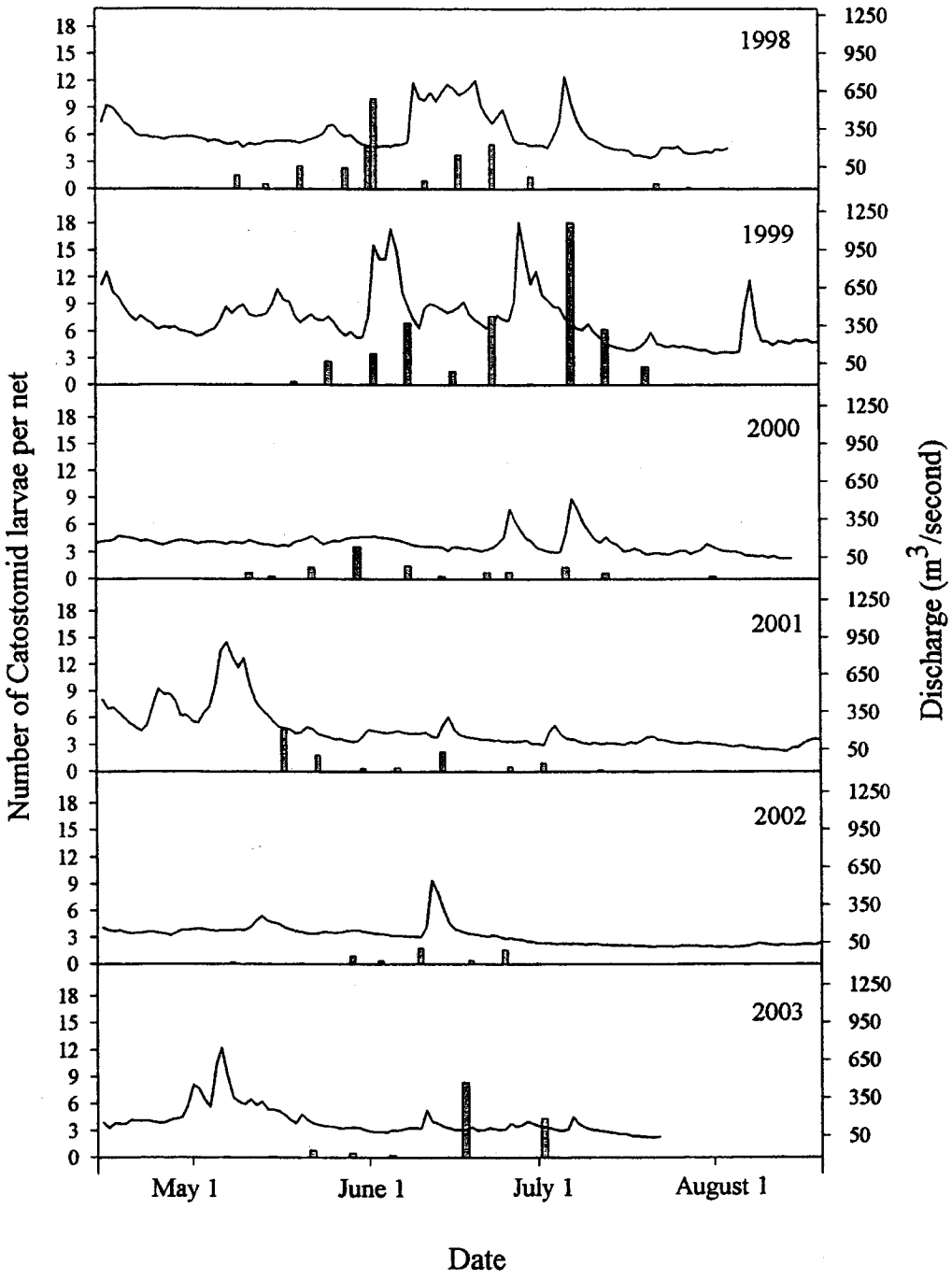

Figure 2.12. Number of Catostomid larvae per net (▬) and mean daily discharge (—) from 1998 through 2003.

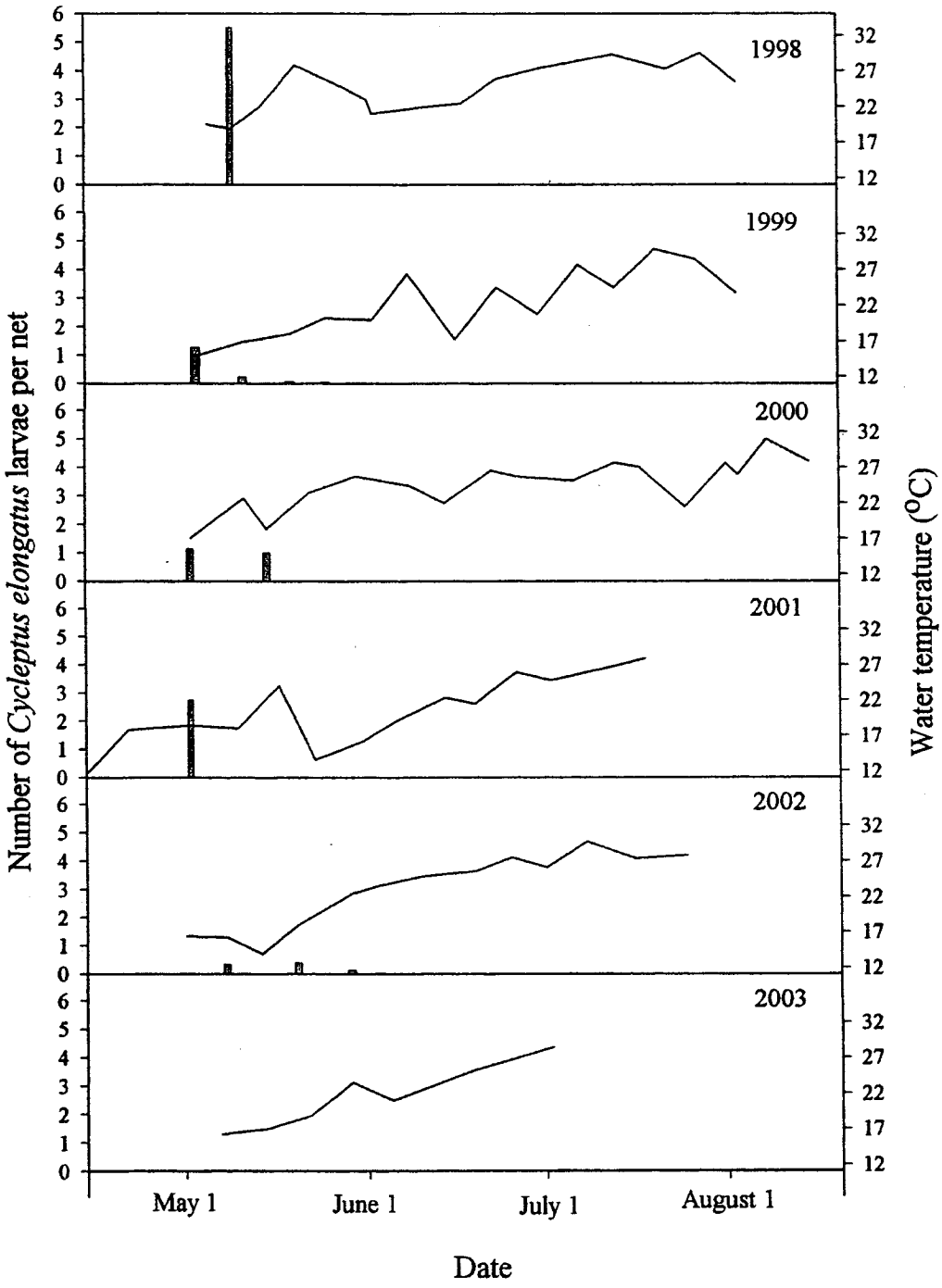

Figure 2.13. Number of *Cycleptus elongatus* larvae per net (▬) and water temperature (——) from 1998 through 2003.

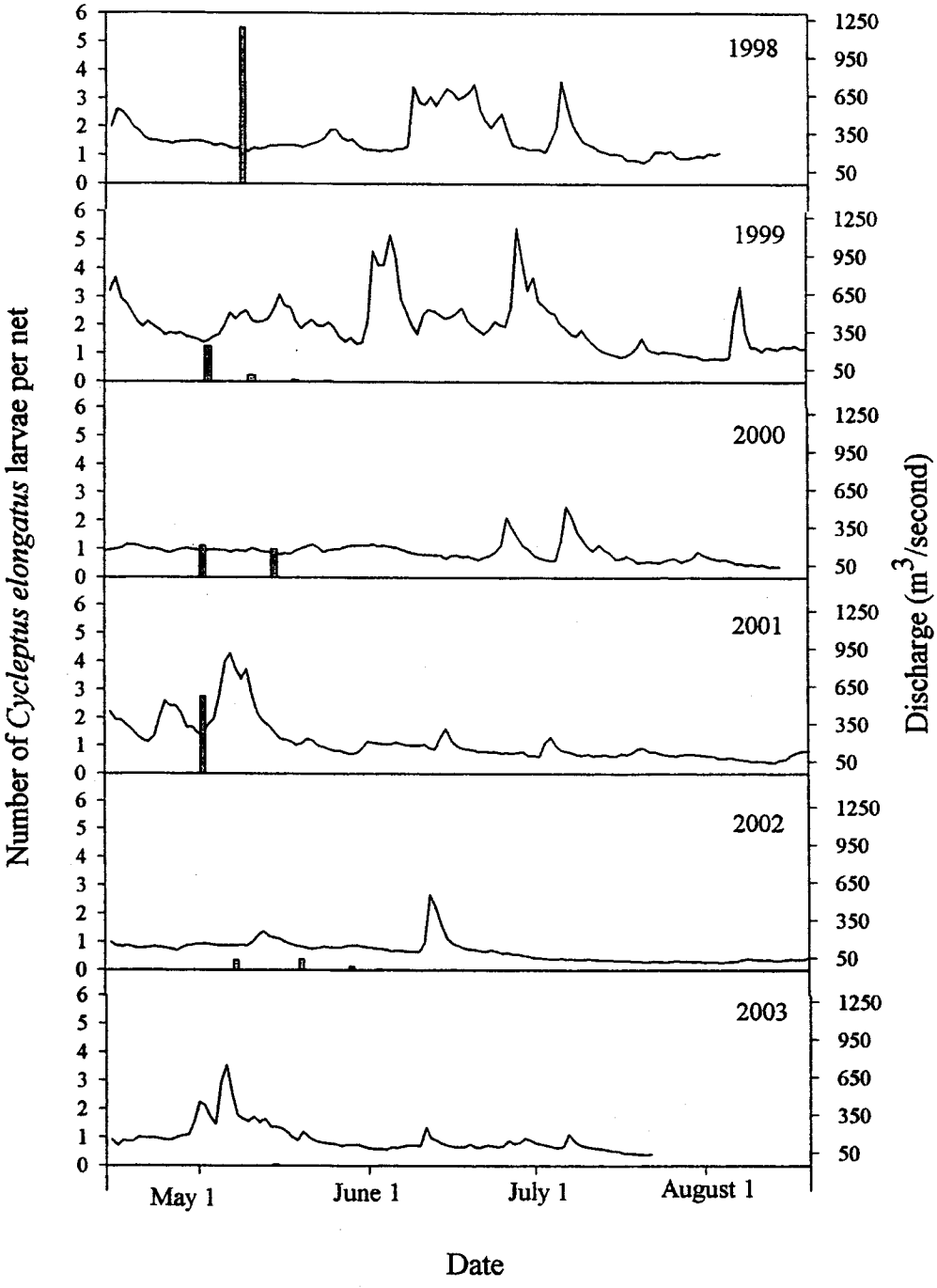

Figure 2.14. Number of *Cycleptus elongatus* larvae per net (▬) and mean daily discharge (—) from 1998 through 2003.

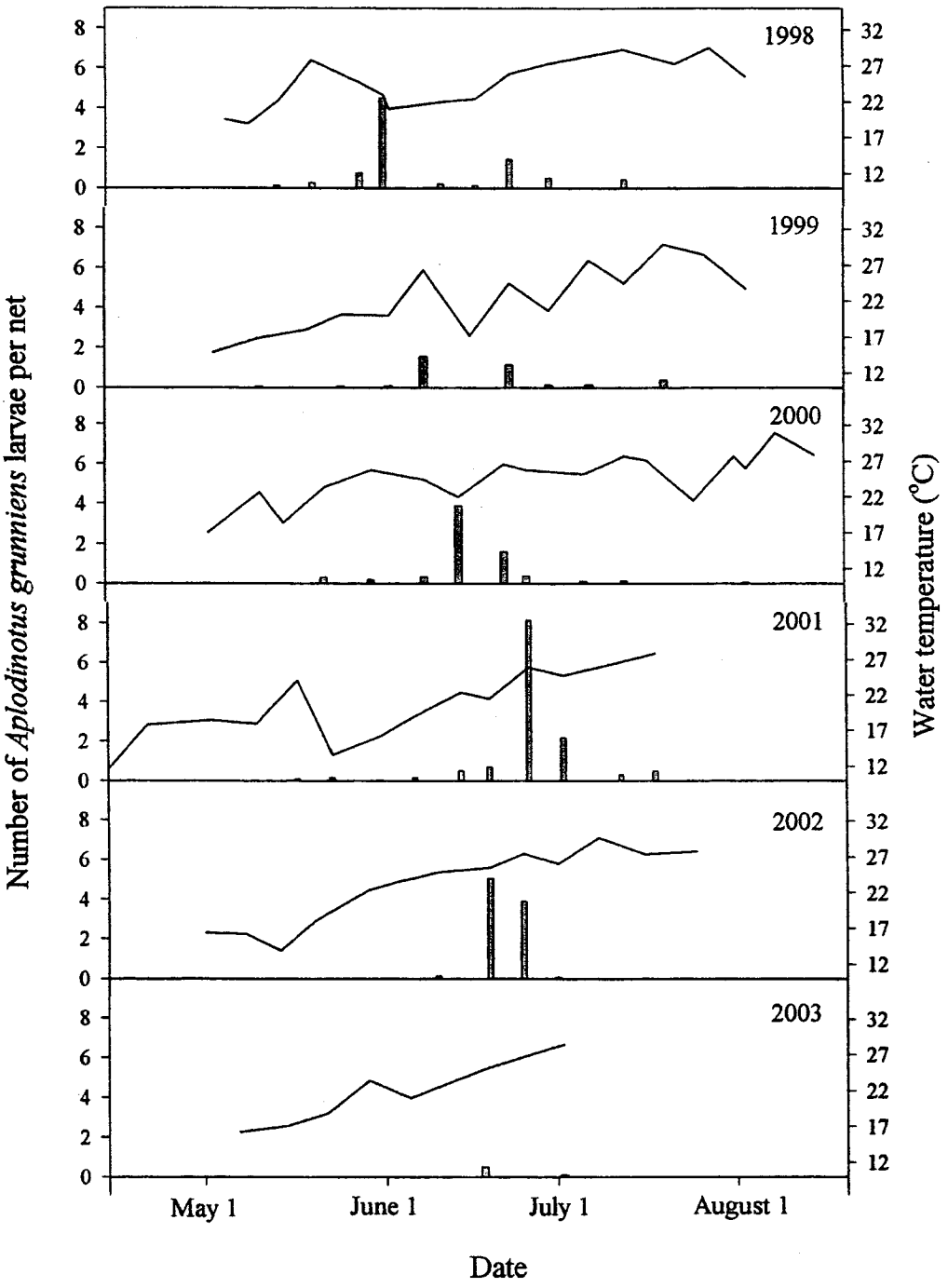

Figure 2.15. Number of *Aplodinotus grunniens* larvae per net (▬) and water temperature (—) from 1998 through 2003.

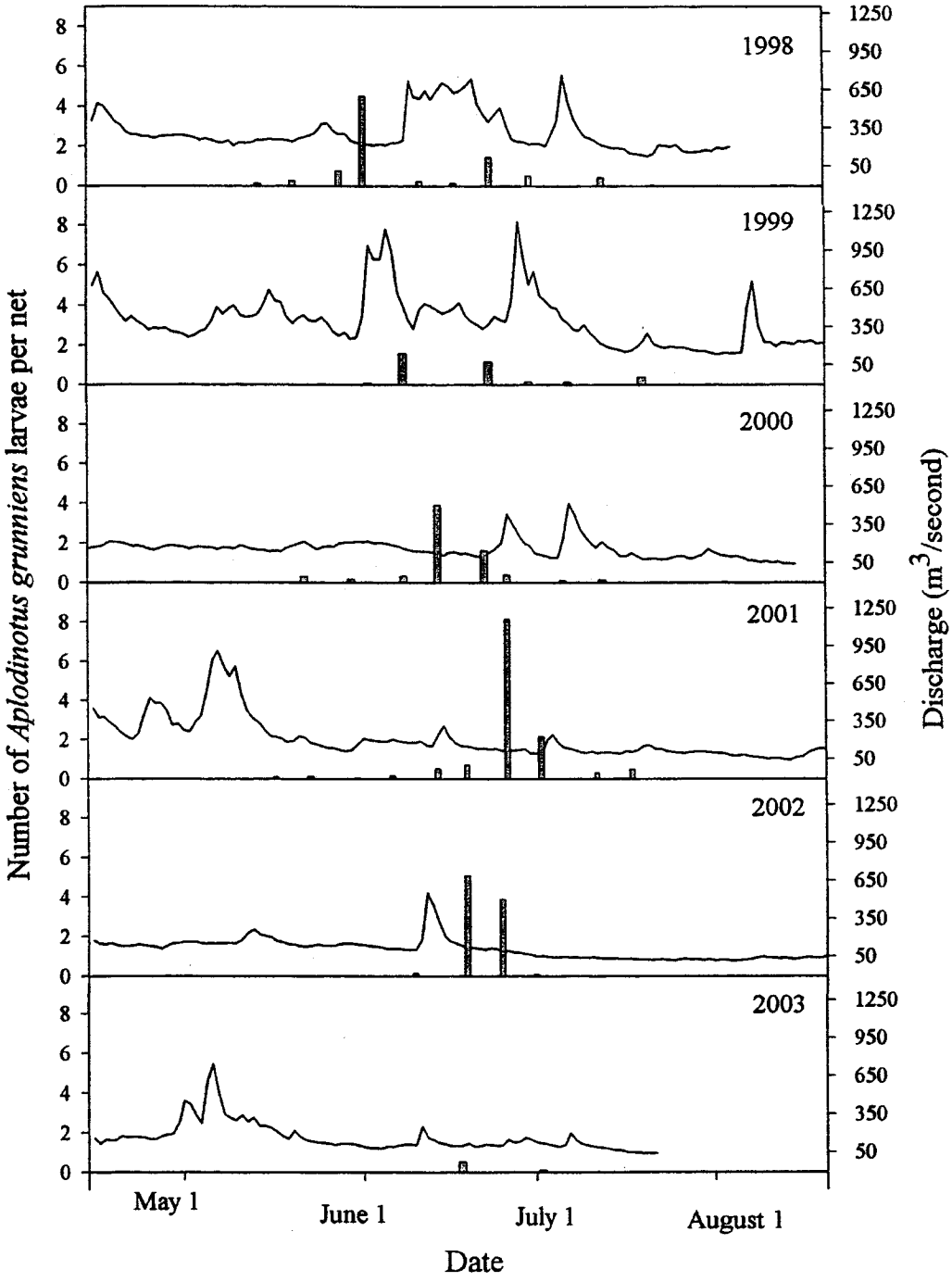

Figure 2.16. Number of *Aplodinotus grunniens* larvae per net (▬) and mean daily discharge (—) from 1998 through 2003.

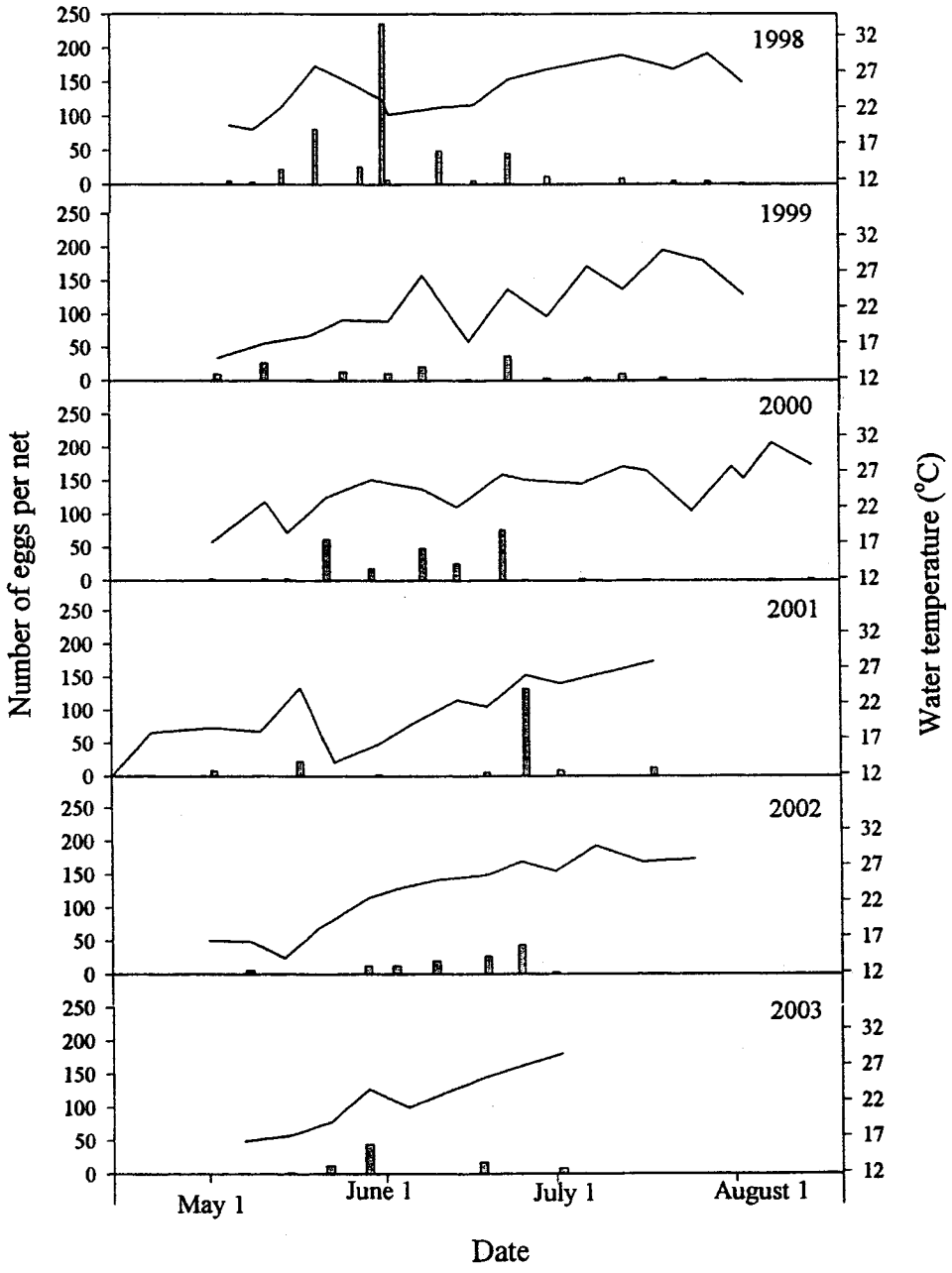

Figure 2.17. Number of fish eggs collected ( ) per net and water temperature (—) from 1998 through 2003.

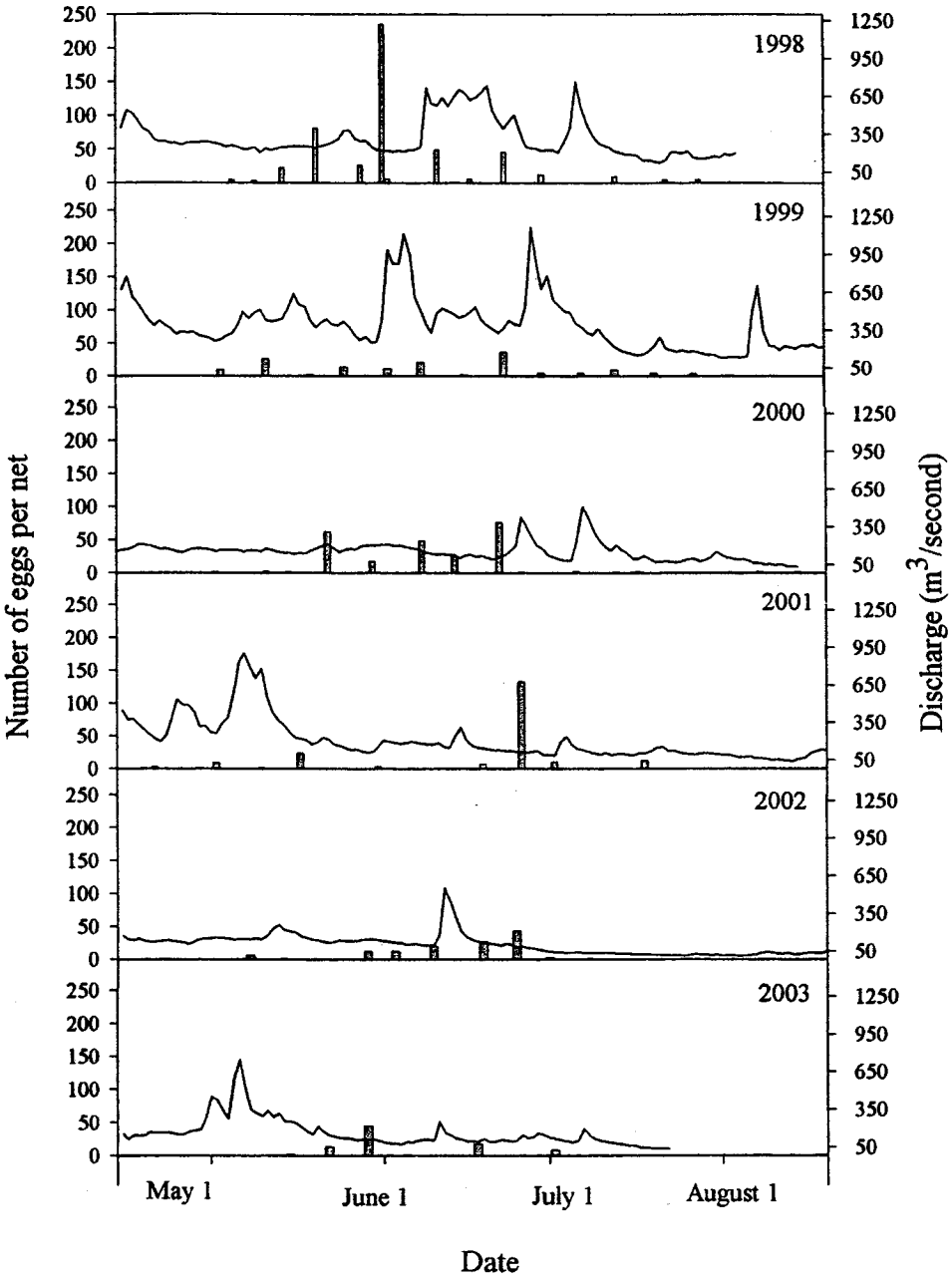

Figure 2.18. Number of fish eggs collected (▭) per net and mean daily discharge (—) from 1998 through 2003.

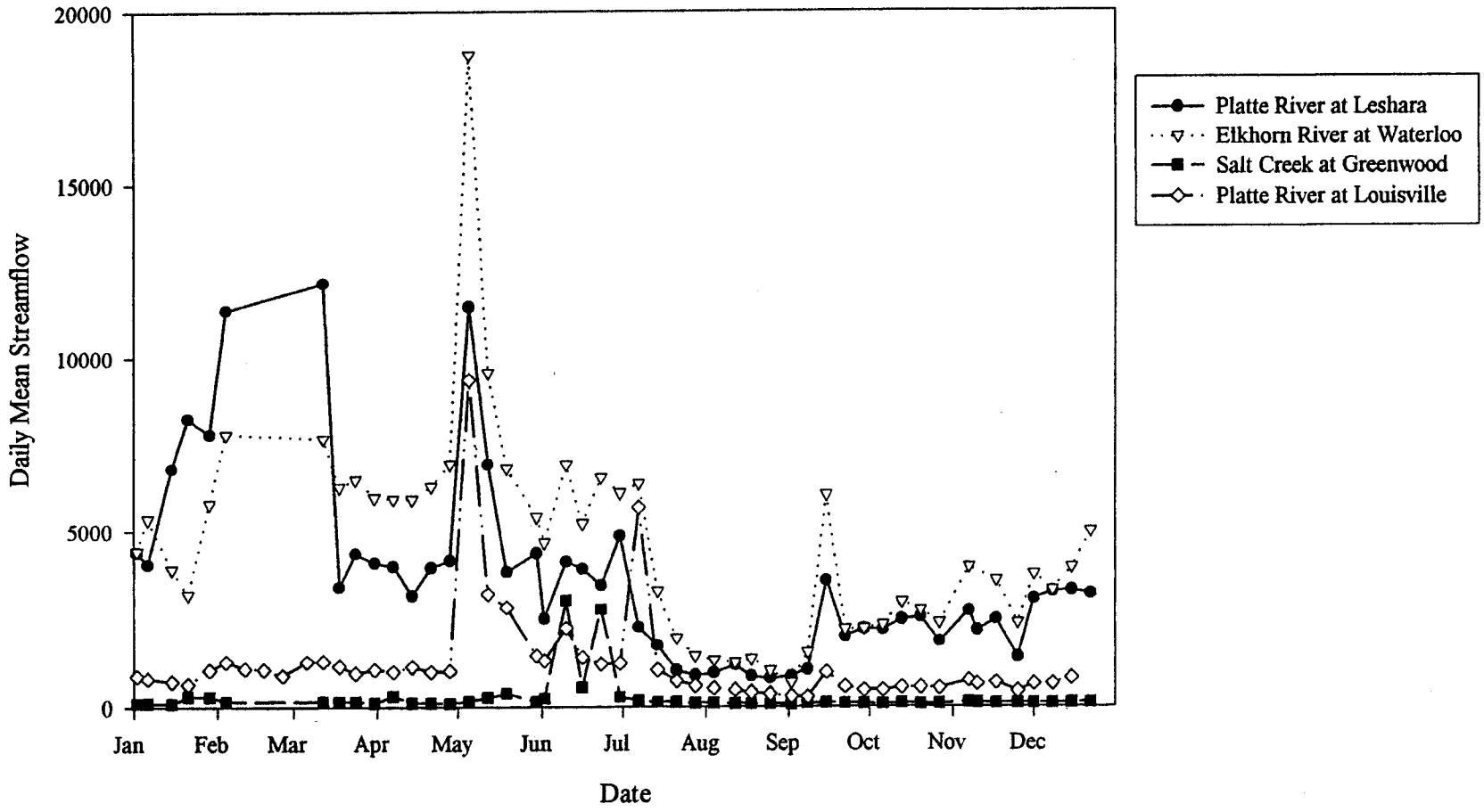

Figure 3.1. Average daily mean streamflow for the sampling locations in 2003.

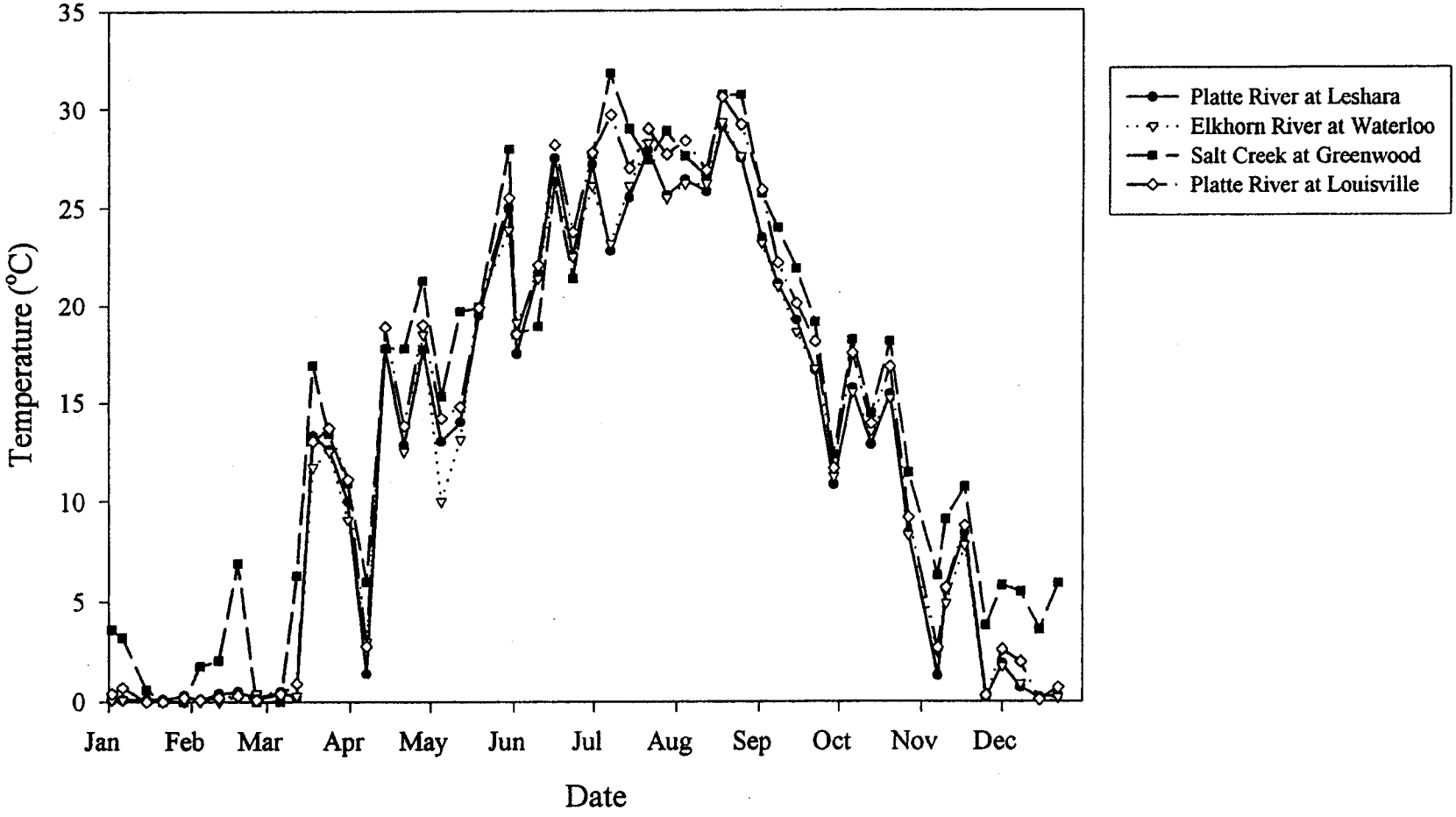

Figure 3.2. Average temperature at the sampling locations in 2003.

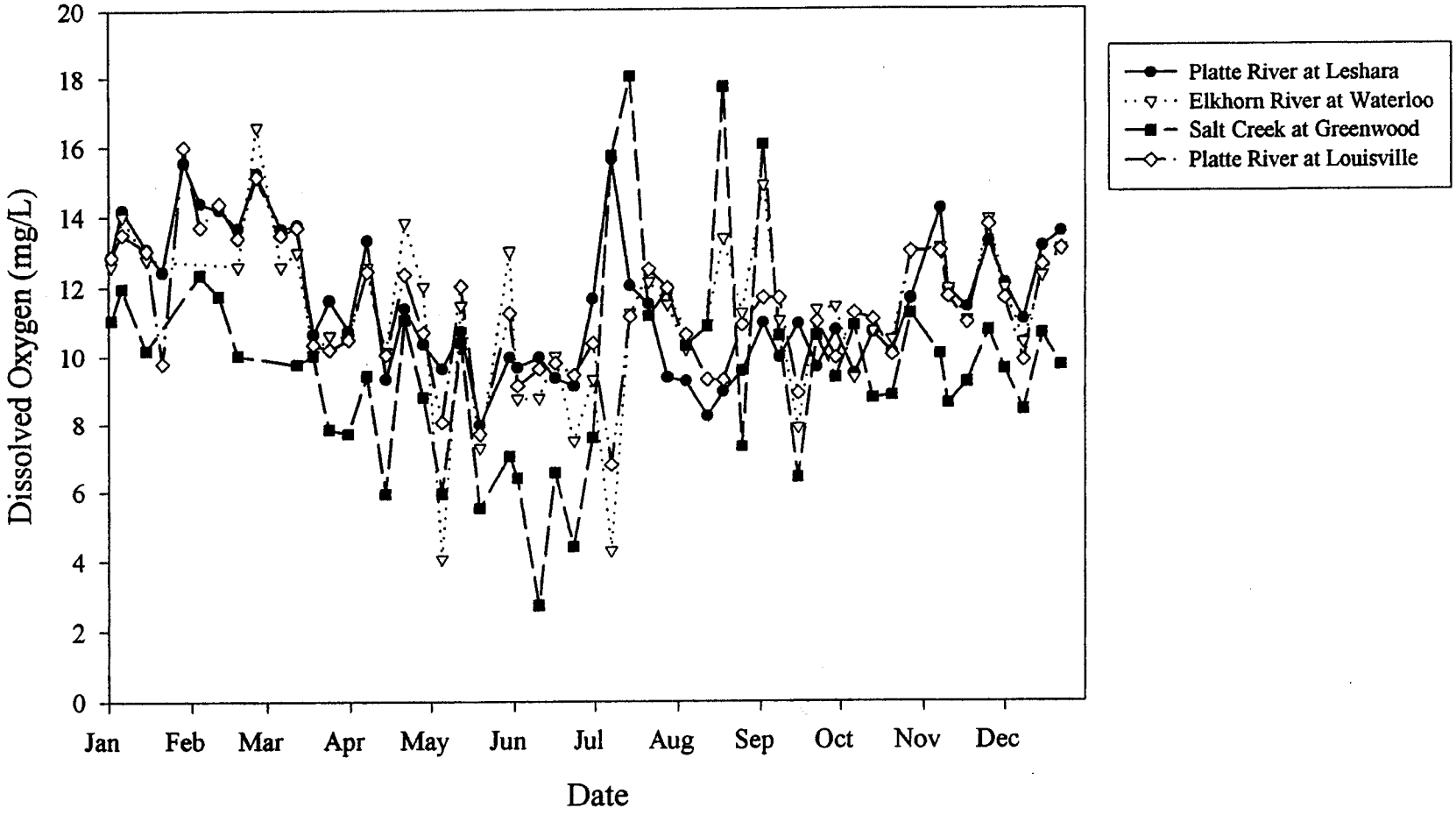

Figure 3.3. Average dissolved oxygen at the sampling locations in 2003.

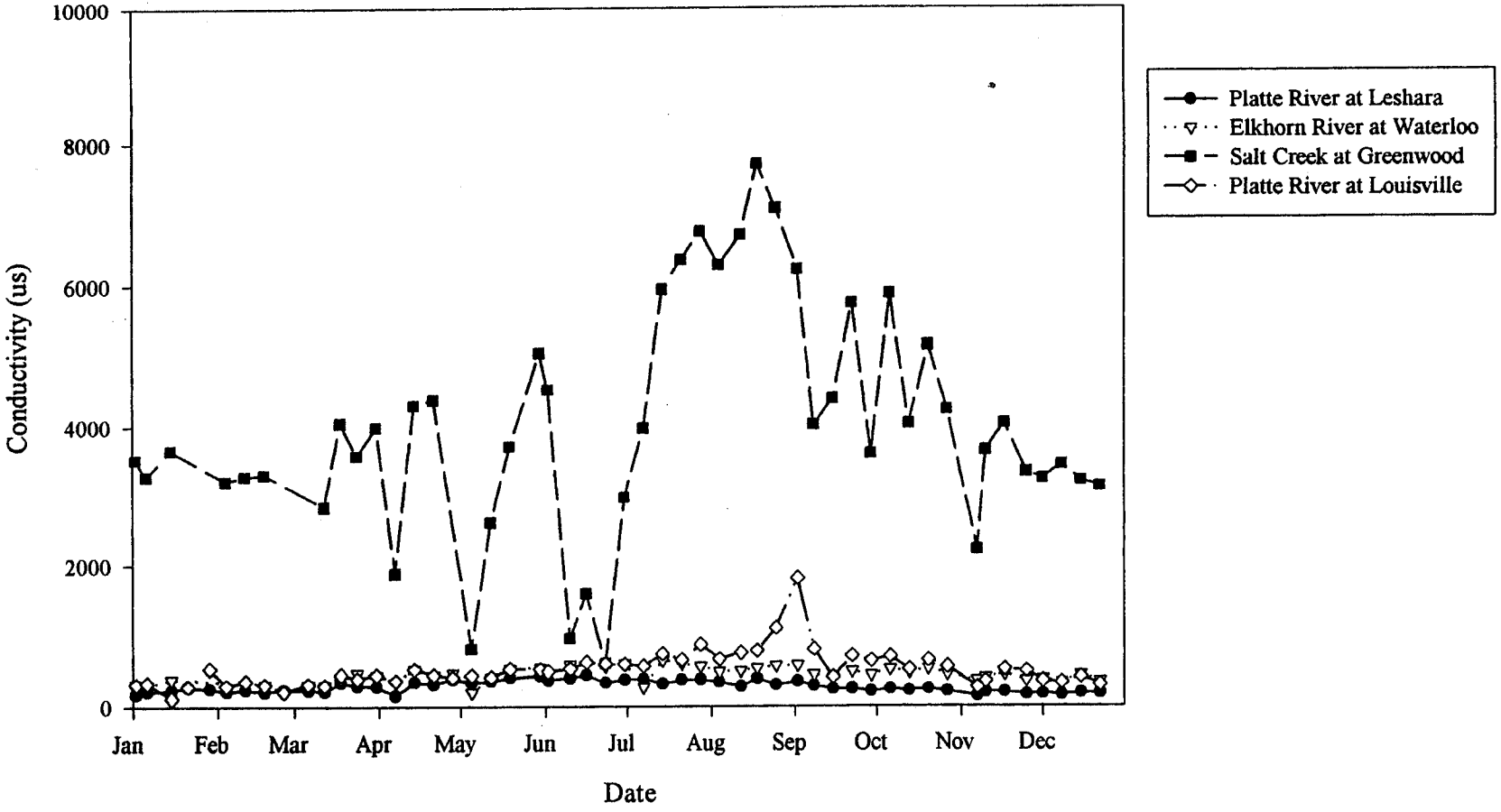

Figure 3.4. Average conductivity for the sampling locations in 2003.

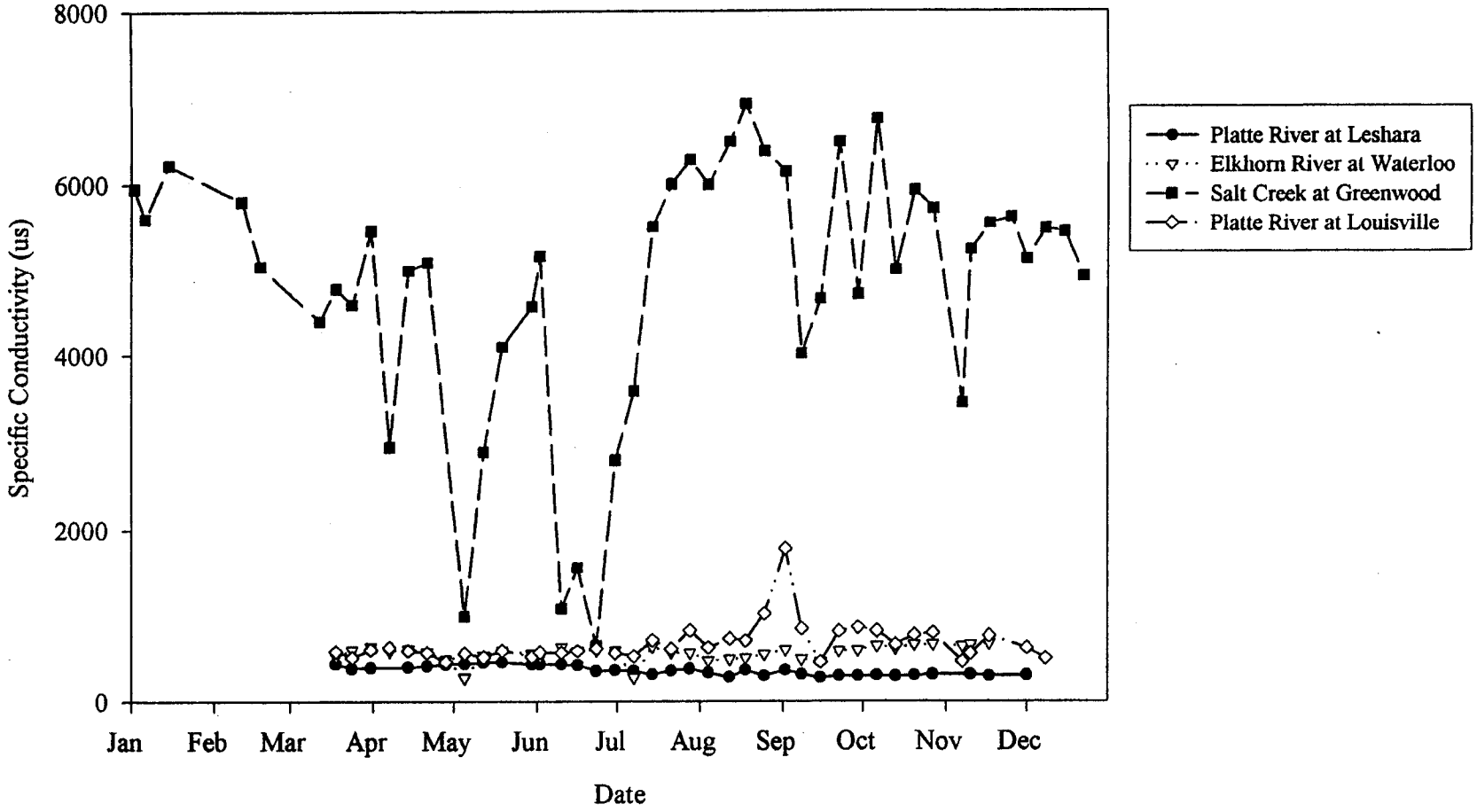

Figure 3.5. Average specific conductivity for sampling site in 2003.

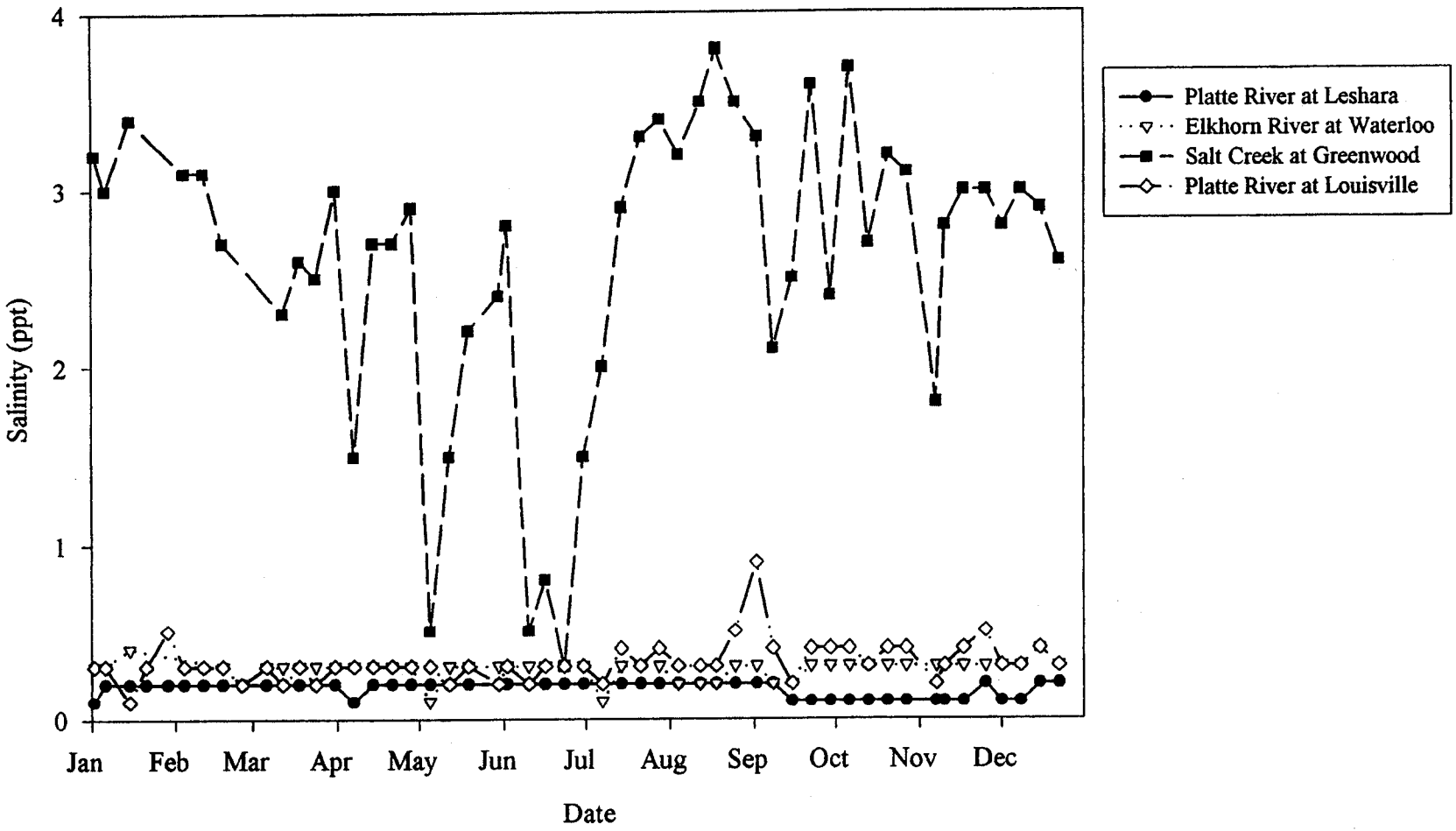

Figure 3.6. Average salinity for the sampling locations in 2003.

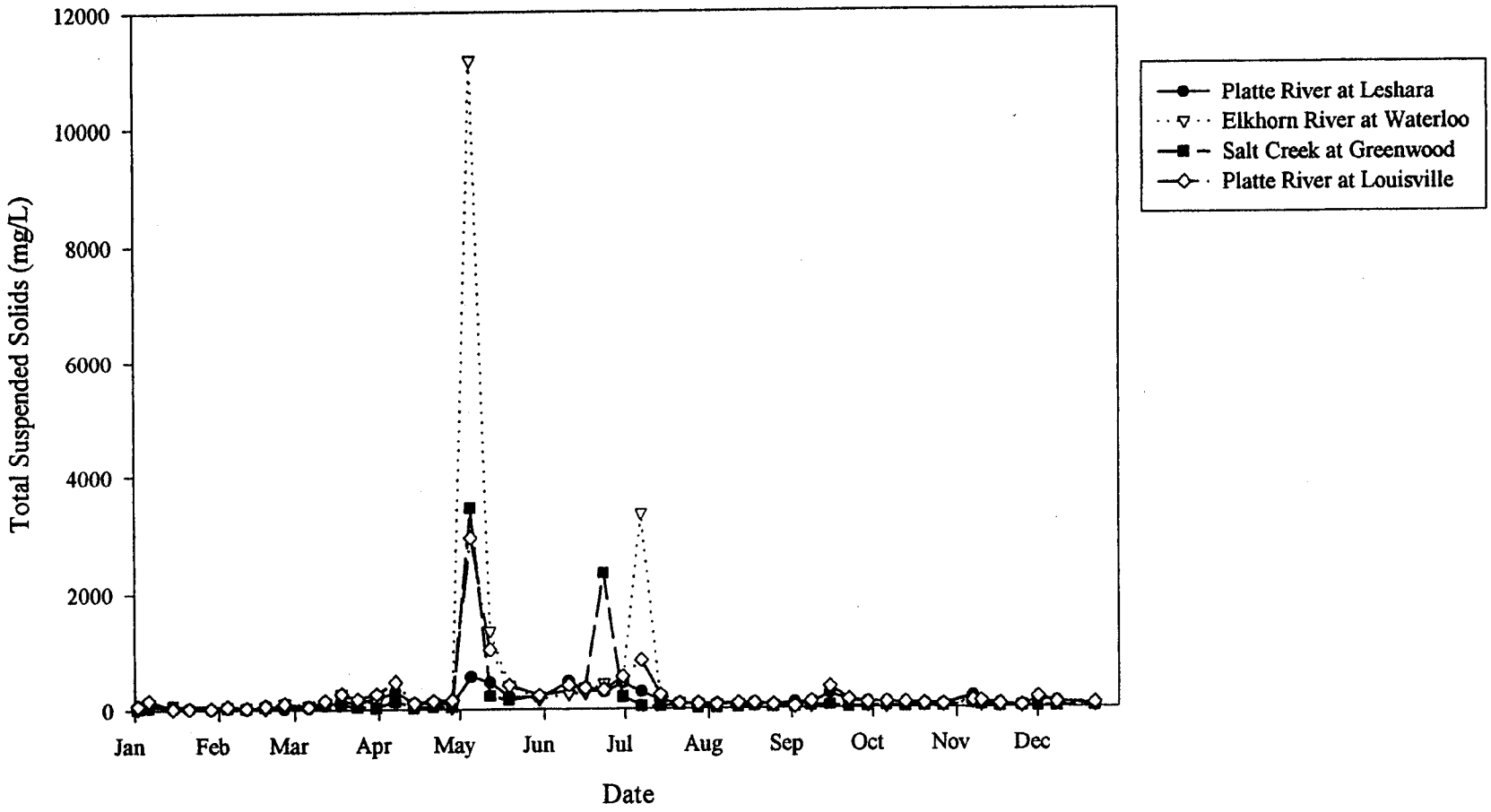

Figure 3.7. Average total suspended solids for the sampling locations in 2003.

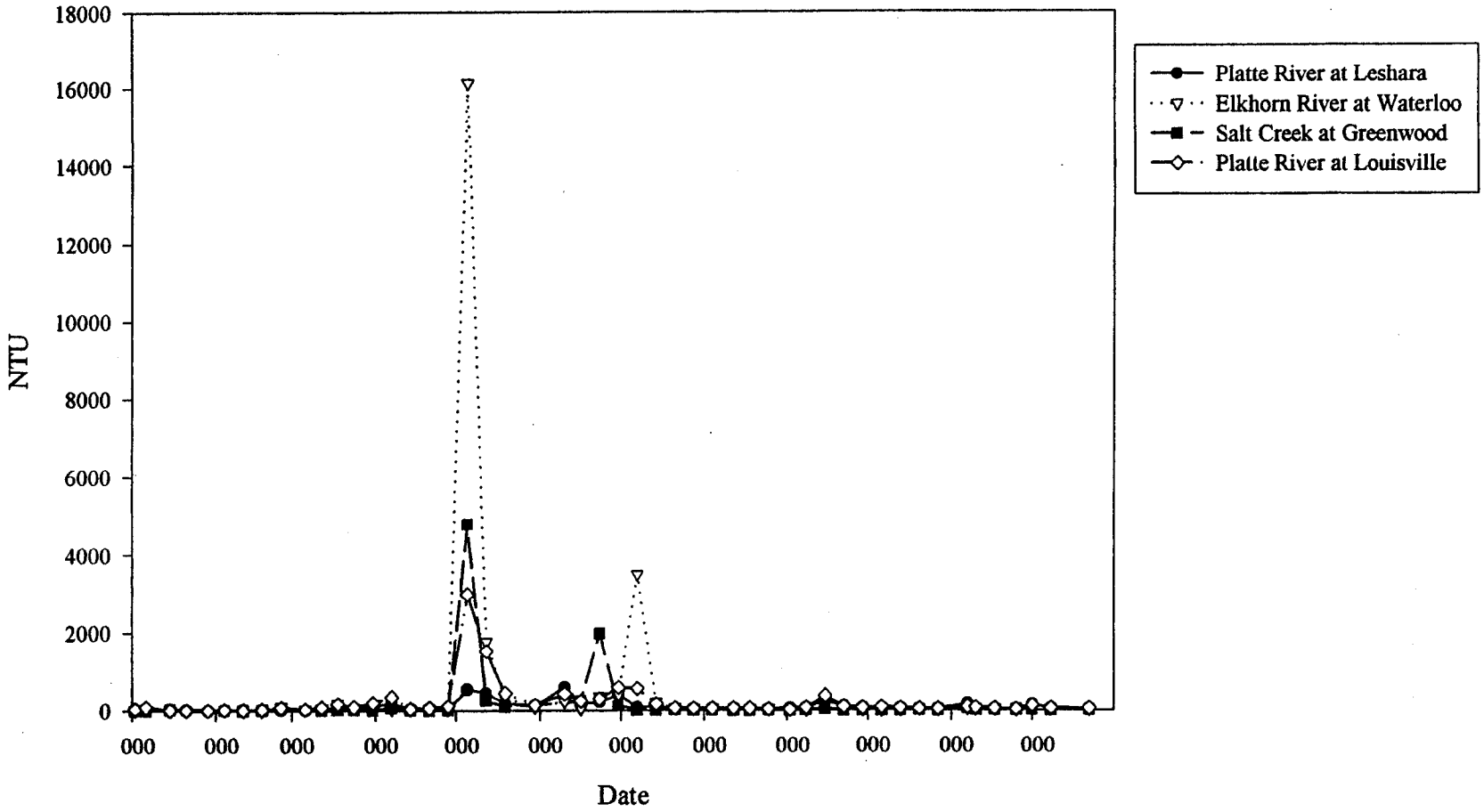

Figure 3.8. Average NTU for the sampling locations in 2003.

Table 3.1. Descriptive information for the aerial images used for habitat classification from the lower Platte River, NE. The gage site represents the nearest USGS gage for classified image. In some cases, discharge was determined from a combination of USGS gages. Gage sites are as follows: LSV = Platte River at Louisville, NE; ASH = Platte River at Ashland, NE; LES = Platte River at Leshara; ELK = Elkhorn River at Waterloo, NBD = Platte River at North Bend, NE; LPC = Loup Power Canal at Genoa, NE; LPR = Loup River at Genoa, NE; DCN = Platte River at Duncan, NE. GPS coordinates are in decimal degrees and are located approximately mid-channel at the upstream and downstream ends of the river section. UPGPSW = upstream GPS west, UPGPSN = upstream GPS north, DGPSW = downstream GPS west, DGPSN = downstream GPS north.

Site ID	Date	Gage Site	Discharge (m^3/sec)	Length (km)	UPGPSW	UPGPSN	DGPSW	DGPSN
1	15-Aug-2002	DCN	0	5.7	-97.3801	41.3962	-97.3218	41.3970
2	15-Aug-2002	LES	27	4.5	-96.3578	41.2468	-96.3605	41.2191
3	15-Aug-2002	LSV	40	4.7	-96.2254	40.9979	-96.1718	41.0079
4	1-Apr-1999	DCN	69	5.1	-97.3801	41.3962	-97.3218	41.3970
5	22-Apr-1993	DCN	80	11.0	-97.4431	41.3748	-97.3211	41.3965
6	1-Apr-1999	DCN+LPR	116	3.3	-97.3218	41.3970	-97.2836	41.3965
7	21-Mar-1994	DCN+LPR+LPC	133	2.8	-97.3175	41.3985	-97.2833	41.3996
8	18-Apr-1994	NBD	159	5.0	-96.8182	41.4497	-96.7599	41.4526
9	4-Apr-1999	LES	161	16.4	-96.3534	41.2537	-96.3130	41.1209
10	4-Apr-1999	LES	161	13.9	-96.5665	41.4357	-96.4318	41.3664
11	1-Apr-1999	DCN+LPR+LPC	165	3.5	-97.2836	41.3965	-97.2459	41.3845
12	16-Apr-1993	NBD	180	38.3	-97.2419	41.3833	-96.8235	41.4487
13	6-Apr-1999	NBD	186	15.8	-97.1304	41.3859	-96.9672	41.4408
14	21-Mar-1994	DCN+LPR	186	3.7	-97.2833	41.3996	-97.2462	41.3838
15	4-Apr-1999	ASH	220	11.8	-96.3182	41.1281	-96.3072	41.0368
16	14-Apr-1993	ASH-ELK	222	12.1	-96.3532	41.2536	-96.3203	41.1581
17	4-Apr-1999	LSV	240	31.3	-96.2557	41.0172	-95.9338	41.0586
18	6-Apr-1999	LES	249	8.3	-96.4417	41.3713	-96.3985	41.3089
19	22-Apr-1993	NBD	294	24.4	-96.7555	41.4525	-96.4903	41.3992
20	2-Apr-1993	ASH-ELK	304	6.5	-96.3794	41.2995	-96.3562	41.2469
21	6-Apr-1999	LSV	306	4.5	-96.2343	41.0041	-96.1850	41.0030
22	14-Apr-1999	ASH	408	7.2	-96.3172	41.0463	-96.2488	41.0157
23	16-Apr-1993	ASH	425	21.0	-96.3187	41.1279	-96.1837	41.0048
24	26-Mar-1993	LSV	439	29.4	-96.1940	41.0010	-95.8810	41.0532
25	22-Apr-1993	ASH-ELK	536	12.7	-96.4547	41.3782	-96.3698	41.2911
26	19-Apr-1999	LSV	595	5.6	-95.9438	41.0579	-95.8808	41.0531

Table 3.2. Area and percent for the habitat types classified from the aerial images of the lower Platte River, NE. Site ID's correspond to location information in Table 1. Percentages are calculated as a proportion of the Total Area – WDIL. OWTR = open water, SSBC = shallow sandbar complexes, EXSB = exposed sandbars, WDIL = woody islands.

Site ID	Discharge (m^3/sec)	OWTR (m^2)	OWTR (%)	SSBC (m^2)	SSBC (%)	EXSB (m^2)	EXSB (%)	WDIL (m^2)	Total Area (m^2)
1	0	0	0	0	0	2,750,598	100	416,331	3,166,929
2	27	0	0	785,016	32	1,638,342	68	693,198	3,116,556
3	40	152,271	5	1,456,947	46	1,553,022	49	0	3,162,240
4	69	22,086	1	2,096,109	88	265,437	11	458,982	2,842,614
5	80	807,939	13	4,243,563	68	1,211,832	19	383,535	6,646,869
6	116	312,795	21	860,202	57	338,337	22	821,160	2,332,494
7	133	472,167	37	464,850	36	339,165	27	131,751	1,407,933
8	159	1,789,488	65	581,247	21	378,585	14	337,005	3,086,325
9	161	6,575,418	71	1,993,383	22	701,640	8	1,731,609	11,002,050
10	161	4,414,248	55	2,265,021	28	1,373,319	17	1,676,934	9,729,522
11	165	999,324	44	724,878	32	523,854	23	726,696	2,974,752
12	180	13,801,968	71	2,817,054	14	2,877,984	15	5,755,185	25,252,191
13	186	4,363,668	45	3,482,262	36	1,912,086	20	1,081,017	10,839,033
14	186	1,175,427	54	631,026	29	384,408	18	56,754	2,247,615
15	220	4,522,914	67	1,441,071	21	783,180	12	1,190,196	7,937,361
16	222	5,926,383	82	578,457	8	720,765	10	1,749,105	8,974,710
17	240	11,682,639	62	4,388,157	23	2,694,276	14	3,761,748	22,526,820
18	249	3,881,376	75	1,174,779	23	125,010	2	1,990,818	7,171,983
19	294	10,541,880	73	1,851,552	13	2,110,644	15	5,573,349	20,077,425
20	304	2,431,188	57	838,089	20	990,036	23	547,029	4,806,342
21	306	1,750,491	59	746,001	25	470,160	16	0	2,966,652
22	408	4,353,462	95	202,968	4	48,924	1	816,525	5,421,879
23	425	11,280,402	86	806,436	6	1,085,751	8	2,436,984	15,609,573
24	439	12,296,934	68	3,104,397	17	2,761,308	15	3,917,322	22,079,961
25	536	6,157,746	79	1,001,970	13	665,658	9	2,590,200	10,415,574
26	595	2,851,551	95	121,527	4	33,957	1	319,410	3,326,445

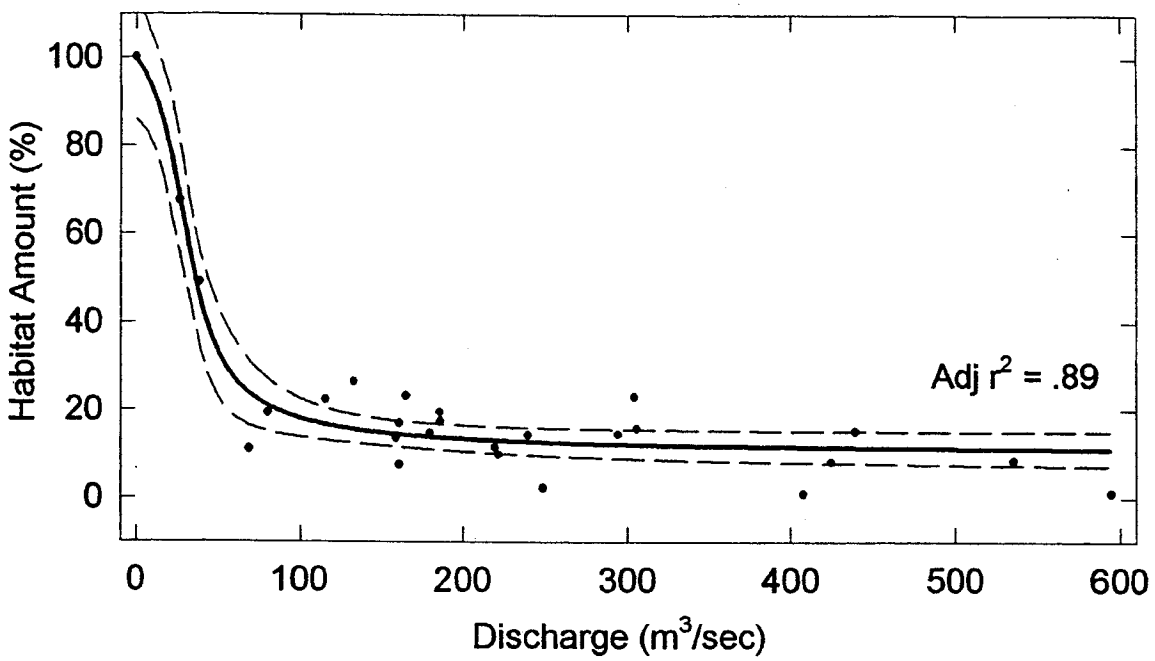

Figure 3.9. Curve of best fit for the exposed sandbars from the aerial images. The solid line represents the fitted line, the dashed lines are the 95% confidence intervals about the line, and the dots are the observations

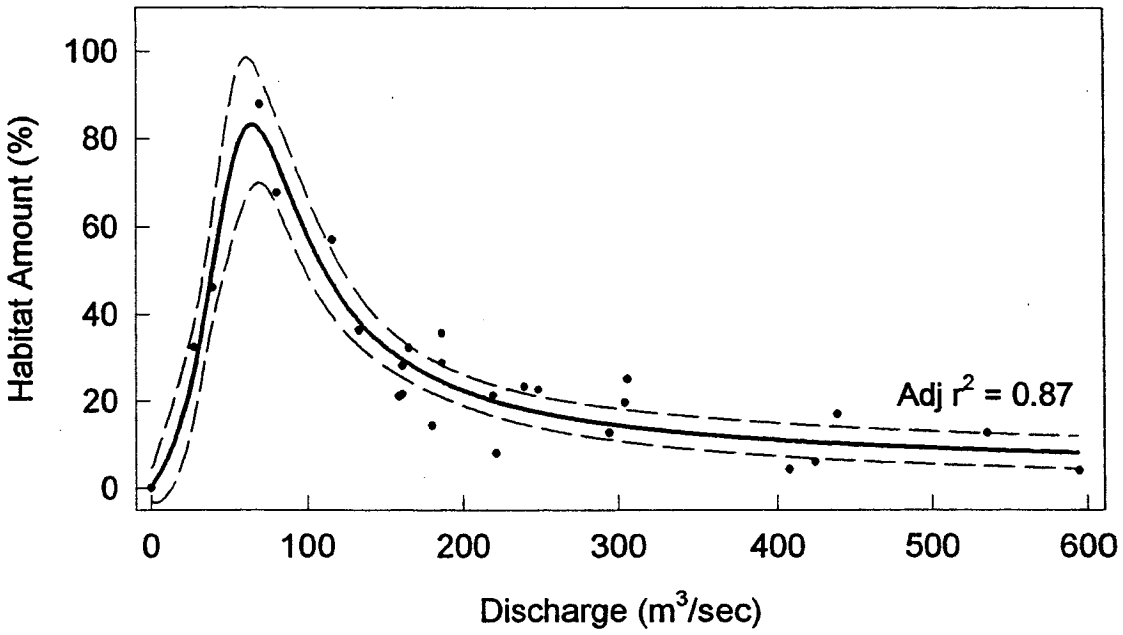

Figure 3.10. Curve of best fit for the shallow sandbar complexes from the aerial images. The solid line represents the fitted line, the dashed lines are the 95% confidence intervals about the line, and the dots are the observations.

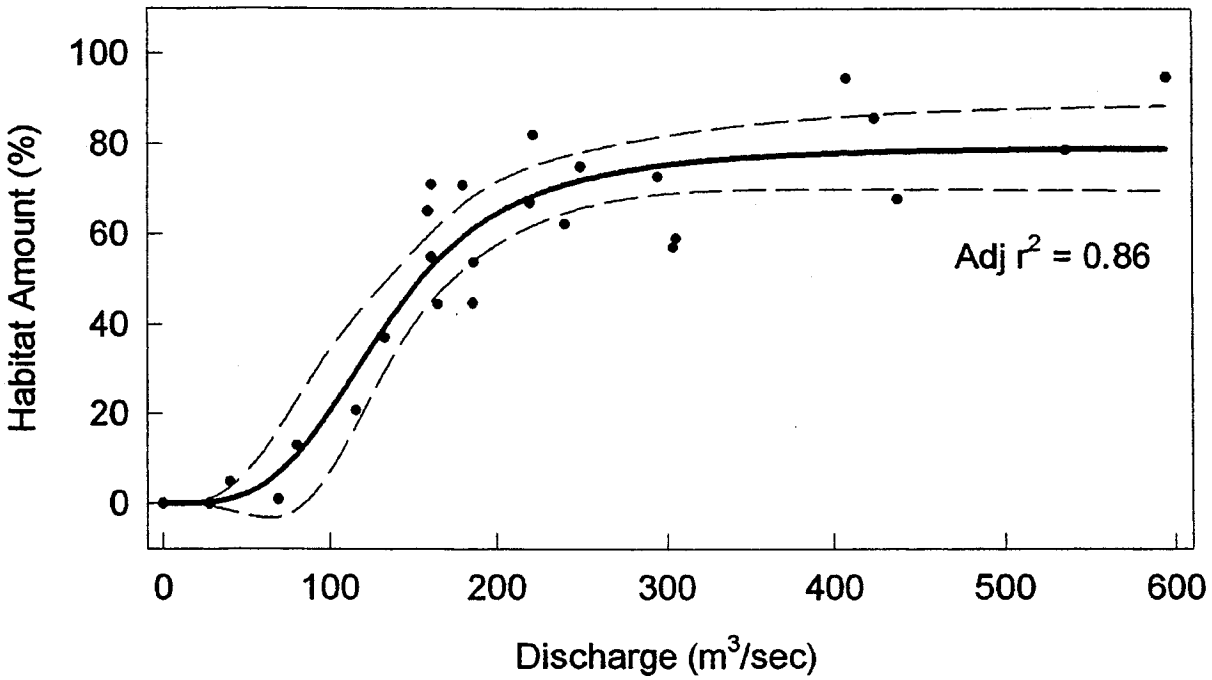

Figure 3.11. Curve of best fit for the open water data from the aerial images. Solid line represents the fitted line, the dashed lines are the 95% confidence interval about the line, and the dots are the obsevations.

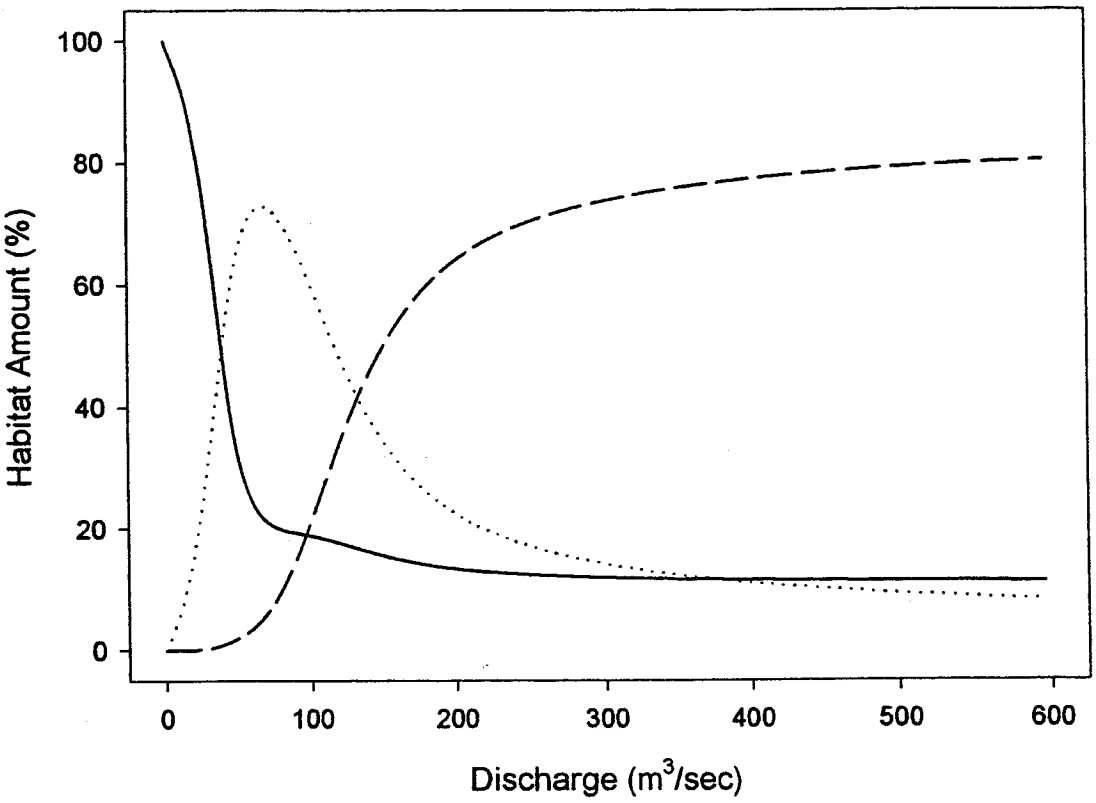

Figure 3.12. The simultaneously corrected curves for the habitat type vs. river discharge. The solid line represents exposed sandbars, the dotted line is shallow sandbar complexes, and the dashed line represents open water.

Table 4-1. Summary of anglers interviewed in the lower Platte River NE, 2002.

Site	Total Number of Anglers	Number of Sturgeon Anglers	Total Sturgeon Caught	Sturgeon Catch Per Hour		Total Sturgeon Harvested	Percent Sturgeon Harvested
Schramm	29	1	11 (0)	0.14	0	1	17
Louisville	3	0	0	0	-	0	-
Schilling	65	20	15 (14)	0.09	0.16	10	67
Total	97	21	26 (14)	0.10	0.15	11	-

Table 4-2. Summary of anglers interviewed in the lower Platte River NE, 2003.

Site	Total Number of Anglers	Number of Sturgeon Anglers	Total Sturgeon Caught	Sturgeon Catch Per Hour		Total Sturgeon Harvested	Percent Sturgeon Harvested
Schramm	11	0	1 (0)	0.03	-	0	0
Louisville	6	0	0	0	-	0	-
Schilling	63	14	17 (10)	0.09	0.27	1	8
Total	80	14	18 (10)	0.07	0.27	1	-

Table 4-3. Results of the angler pallid sturgeon identification survey.

	2002		2003	
	Species Sought		Species Sought	
	Sturgeon	Other	Sturgeon	Other
Correct Identification (%)	86	55	86	64
Number of Identification Surveys	21	76	14	66

June, 2004

Papio-Missouri River NRD Board Members

Last Name	First Name	Dates of Service
Andersen	Harry	1975 -1979
Andersen	Merle	1985 -1989
Appleby	Richard	1981 -1987
Arp	Willie	1979 -1983
Ashford	Paula	1989 -1997
Baldwin	Joe	1993 -1996
Barkely	Keith	1975 -1979
Barry	Stephen	1991 -1995
Bartling	Donald	1984 -1991
Begley	David	1989 -1993
Bell	Robert	1991 -1996
Britton	Joseph	1981 -1983
Brown	William	1989 -1991 *
Camden	Sarah	1981 -1983
Campbell	Jack	1993 -1997
Chamberlain	Eugene	1989 -1991 *
Christensen	Milton	1975 -1989
Conley	Fred	1975 - 77 & 1999 to Present
Conley	John	1999 - Present
Connealy	Dick	1985 - Present *
Cooney	Joan	1975 - 77 & 1985-89
Dickinson	Robert	1975 -1983
Donaldson	Beverly	1993 -1997
Dostal	Richard	1989 -1990
Dworak	Robert	1975 -1981
Emrich	William	1975 -1981
Falk	Robert	1975 -1979
Foster	Tom	1995 -1999
Fowler	Tim	2003 - Present
Fricke	Milton	1979 - 81 & 1985 - 89
Frisk	Deanna	1991 -1995
Gardner	Melissa	2001 - Present
Gramlich	Leonard	1987 -1991
Halsted	Joan	1977 -1985
Heller	Tim	1999 -2003
Hoffman	Ted	1975 -1979
Hoier	Mel	1985 -1987
Jansen	Kenneth	1987 -1999
Jansen	Richard	1995 - Present
Jensen	Lynn	1989 -1991 *
Jensen	Jim	1991 -1995
Johnson	John "Don"	1977 -1985
Kendall	Dennis	1987 -1991
Koch	Jerry	1991 -1999
Kopecky	Raymong	1995 -1999
Krajicek	Tim	1999 - 11/2002
Kramper	Vincent	1989 -1991 *
Lamp	Hazel	1979 -1983

Lang	Duane	1975 -1979
Lang	Thomas	1983 -1987
Latka	William	1985 -1989
Malmquist	Gayle	1975 -1991
Mann	William	1975 -1991
Mathiesen	Roger	1987 -1991
McPherson	Patrick	1979 -1983
Metzler	Robert	1979 -1987
Miller	Edward	1975 -1977
Monen	Maureen	1975 -1977
Neary	Joseph	1997 - Present
Neuberger	John	1983 -1987
Nichols	Barbara	2001 - Present
Norgard	Ronald	1983 -1985
Novak	Raymond	1989 -1990
O'Laughlin	James	1983 -1987
Peters	Milton	1989 -1993 *
Peterson	Larry	1997 -2001
Poston	Evan	1977 -1981
Raftery	William	1975 -1981
Rasmussen	David	1975 -1984
Rasmussen	Wayne	1997 -2001
Rhea	William	1975 -1989
Ridenour	Rosemary	1987 -1991
Rubin	Peter	1996 -2004
Sass	Dorothy	1983 -1985
Sheers	Eric	1991 -1995
Sorensen	Robert	1975 -1989
Spires	David	1987 -1995
Sterling	James	1981 -1985
Tesar	Richard	1985 - 93 & 2001 to Present
Thompson	James	1997 - 99 & 2003 to Present
Thone	James	1979 -1987
Timmerman	Frank	1975 -1991
Torrens	Ralph	1983 -1989
Veys	Charles	1989 -1993
Wagner	Barbara	1991 -1995
Weeth	Rodney	1979 -1987
Wildrick	George	1987 -1991
Wrich	Harry	1975 -1979

* = Member of Middle Missouri Tribs NRD Board of Directors prior to 1/89 merger.

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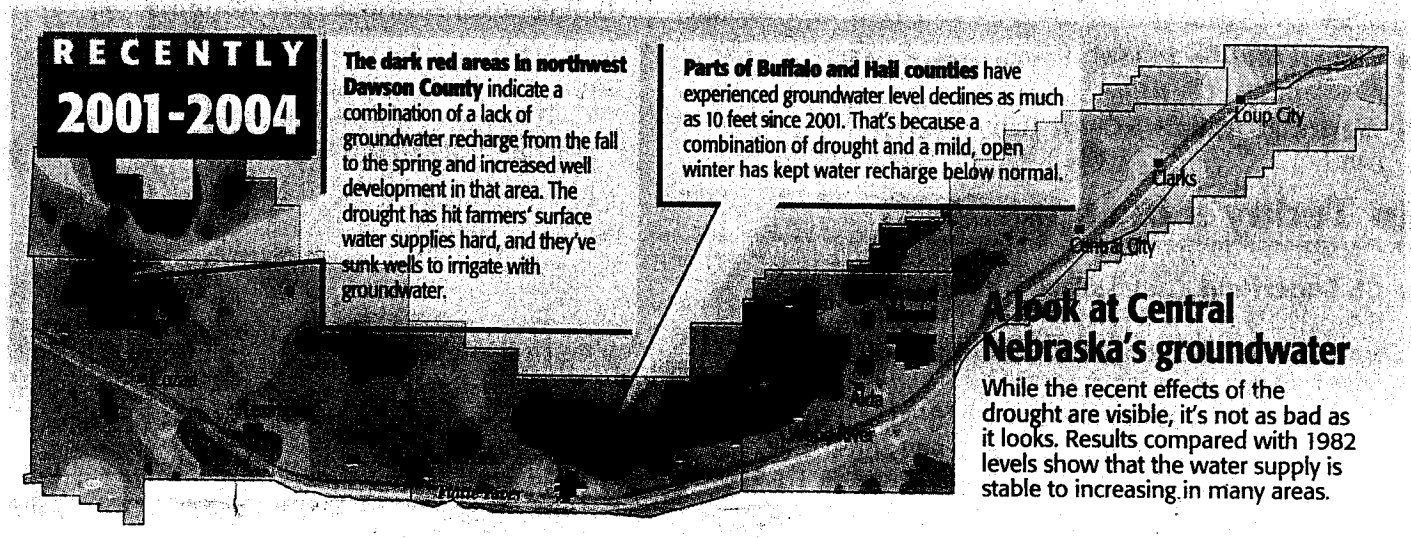
MAY 1 3 2004

Central Platte NRD examines groundwater levels



Water levels declining

Groundwater levels recorded this spring show decline of 2.5 to 5 feet districtwide

By Robert Pore
robert.pore@theindependent.com

The ongoing drought is continuing to cause declines in groundwater levels throughout the Central Platte Natural Resources District, said Ron Bishop, Central Platte NRD manager.

Central Platte NRD officials measure groundwater levels in hundreds of wells throughout the district each spring and fall.

Groundwater levels recorded this spring showed that there was a decline of between 2.5 to 5 feet districtwide compared to groundwater levels measured in the spring of 2003.

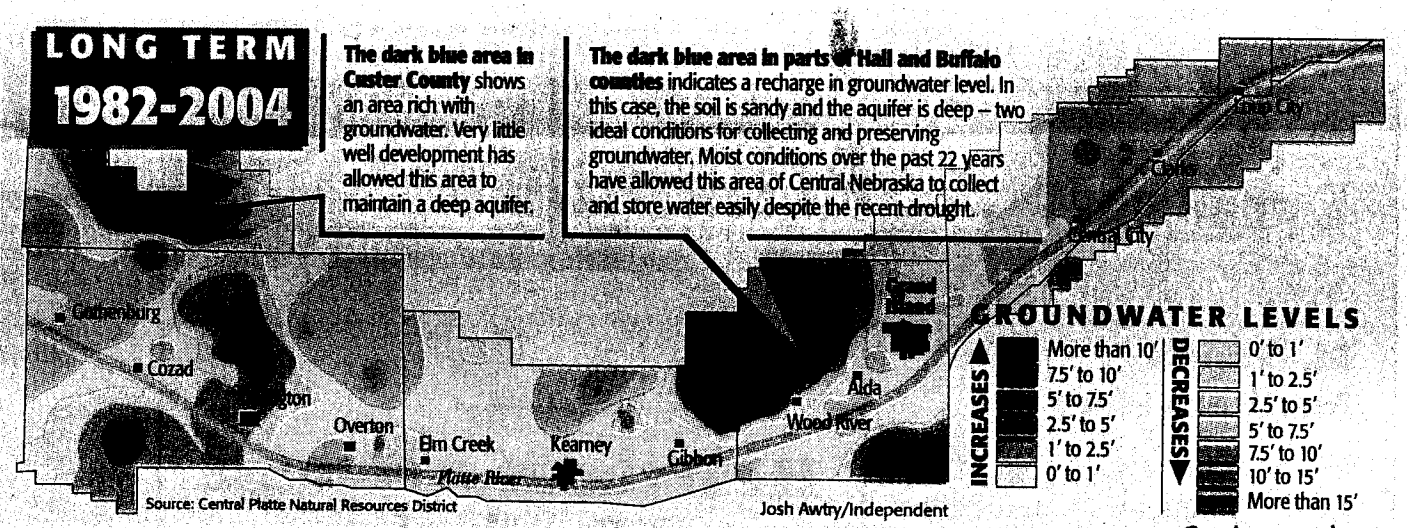
Like last year, Bishop said, a combination of drought and a mild, open winter has kept groundwater recharge below normal.

According to Duane Woodward, hydrologist for the Central Platte NRD, there was a bit of good news from the spring groundwater level readings that indicates a rise

Turn to **Water**, page 5-A

Inside

➤ **More on how drought is affecting farming conditions:** Continued dry conditions are prompting farm organzations to urge the U.S. Department of Agriculture to open up Conservation Reserve Program land for emergency haying and grazing. **3-B**



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Water: Central Platte NRD looks at levels

Continued from page 1-A

in groundwater level in eastern Merrick County of 1.5 to 3 feet. That compared to readings in the spring of 2003 that showed declines of as much as 5 feet.

Woodward said the more eastern area of the Central Platte NRD that includes eastern Merrick County and parts of Hamilton, Polk and Nance counties was the benefactor of more moisture last fall through this spring that recharged the aquifer more than in other parts of the NRD.

But for most parts of the NRD, Bishop said, there continues to be a groundwater decline because of the drought.

"Maybe not as drastic as some of the earlier drought years, but it is still going down," he said.

Since 2001, Bishop said, the level has dropped as much as 10 feet n parts of Hall, Buffalo and Dawson counties as a result of the drought.

The NRD has been checking district groundwater levels in the spring and fall since 1982, which is the year used by the district as a benchmark for groundwater level.

But because of. the ongoing drought since 2001, Bishop said, there are several areas in Merrick, Buffalo and Dawson counties that are even lower than initial groundwater level readings in 1982.

"It really gives you another indication how bad the drought has been on our groundwater supplies," Bishop said. "We are down anywhere from 5 to 7 feet across Merrick, Buffalo and Hall counties and we are 2.5 to 5 feet below where we were in 1982, which we thought was the low point in groundwater supplies. The drought has hit us hard and made an impact."

Bishop said the culprit for the declining water level is the drought, not irrigators. He said since 1982, district irrigators have adopted more efficient irrigation systems that use less water, along with better management practices and improved seed varieties.

"In normal years, we generally pretty much hold our own on groundwater levels and supplies," Bishop said. "There are one or two areas where we have a little more irrigation development than recharge, but other than those areas, we are pretty balanced. But when drought comes along, it throws that balance off."

Bishop said declines in groundwater levels are red flags to district officials responsible for managing the groundwater resource.

"When we get into droughts and see drawdowns, we hope that when the drought is over, groundwater levels come back," he said. "But we better be sure because irrigation is so darn important. We have a good system, but we don't want to endanger that system and throw things out of balance."

Under the NRD's groundwater management plan, when groundwater levels consistently reach a point of below-normal recharge, the district can institute a conservation plan to help rebuild groundwater levels.

That philosophy led the Central Platte NRD board of directors last year to implement a temporary suspension of new well drilling along an area that follows the Platte River through the district.

"The suspension gives us time to look at the situation, plan it out and see how much trouble we do have," Bishop sad. "If we don't have problems, then the suspension will go away, but if we do have problems, it may get extended."

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MAY 1 4 2004

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Irrigators plead with Johanns for help

LRNRD says settlement makes farming area difficult and getting worse

By GINGER JENSEN
Hub Regional Correspondent

ALMA — Lower Republican Natural Resources District officials want to talk to the governor about groundwater allocations expected to start next year as part of the Kansas v. Nebraska Republican River Compact lawsuit settlement.

"You would lose that battle. You would lose in court, and you would lose if you force the settlement back into the Supreme Court, and the Legislature would take it out of your hides."

— State Sen. Ed Schrock

State Sen. Ed Schrock of Elm Creek said Thursday that Gov. Mike Johanns will meet with members of the LRNRD board, with or without state Department of Natural Resources Director Roger Patterson. However, Schrock questioned whether Johanns can do anything about the allocations.

"The governor knows you are concerned," Schrock said, "and he knows farmers are upset."

LRNRD Manager Mike Clements said he'd prefer to schedule the meeting after a study is

Continued

See ◆ IRRIGATE, page 5A

◆ IRRIGATE

Continued from page 1A

completed on the economic effect in the Republican Basin if irrigation wells are turned off. That study is to be finished by July 16.

Schrock suggested that Nebraska ag producers tour eastern Colorado farms that had to go to dryland farming after Kansas won a previous Arkansas River lawsuit against Colorado.

"We all knew this day was coming," Schrock said about the Republican Basin water management changes, "but we didn't know the allocations would be this restrictive. I don't know how much the governor can do. He can't change the compact, and he can't change the numbers, and we have to live up to compliance with the compact."

THE 1943 Republican River Compact allocated the virgin water supply of the river to Colorado, Nebraska and Kansas. Virgin water is defined as water not affected by actions of man.

Kansas sued Nebraska in the U.S. Supreme Court, claiming that Nebraska was using more than its allocation. A key argument was that wells pumping from groundwater hydrologically connected to the river and its tributaries contribute to declining natural flows.

The lawsuit was settled out of court in early 2003.

Clements said the compact is based on consumptive use, not flows at a set measuring point at the state lines. DNR officials have determined that LRNRD groundwater wells are using slightly more than 43,000 acre-feet of water above the allocation.

LRNRD officials have questioned the state's water use figures being fed into a computer model developed by the three states as part of the settlement agreement.

Farmer Todd Kral of Campbell asked Schrock what would happen if farmers refuse to accept water allocations and don't install required well meters.

"You would lose that battle," Schrock said. "You would lose in court, and you would lose if you force the settlement back into the Supreme Court, and the Legislature would take it out of your hides."

HE SAID HE'S not sure he'd be doing anything differently if he was a member of the LRNRD board.

"I'm not sure if suing the state is the right thing or the wrong thing to do, but you have to do what you feel you have to do," said Schrock, who is chairman of the Legislature's Natural Resources Committee.

He added that LB962, the new water policy bill passed in April by the Legislature, has little to do with the compact settlement but may be another tool for water management.

Director Jim Moore of Bloomington said the Republican Basin problems become larger almost daily. "The river has been shut off. The (irrigation) canals have been shut off, and, now, we are talking about shutting off irrigation wells," he said.

Schrock said another factor is that a lot of new irrigation wells were drilled in the LRNRD before a well moratorium took effect in December 2002. Because Nebraska law has no priority date system for groundwater wells, water use by the new wells must be shared with older wells.

"The water situation in a lot of the state is going to get really ugly," Schrock said, including court involvement triggered by the Pumpkin Creek lawsuit.

SURFACE WATER right holders along the southern Panhandle creek are suing upstream landowners who drilled groundwater wells that allegedly caused Pumpkin Creek to go dry, making the surface water rights worthless.

Schrock hopes DNR and the NRDs can solve the problem out of court. "If the courts get involved, they will control water in the state," he said.

When asked by board member John Burkholder of northern Harlan County what financial assistance the state can give to help with any of the basin concerns, Schrock said most state funds must be spent on already designated purposes.

"There is a lot of pent-up demand for money in the state right now," he said.

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W-H
6-11-04

Safety on the trails

Project will help get rescuers to the right spots.

Trails provide safe places for healthy exercise. But the growing network of trails in the Omaha area isn't safe from all life's dangers.

Though rare, incidents requiring emergency response do happen. A heart attack, lightning strikes and a stabbing have been reported in the past few years in Douglas and Sarpy Counties.

Mile markers currently being installed along the two counties' 85 miles of trails will be an aid in such emergencies, particularly in more remote areas.

The experience of an Iowa rescue squad that had trouble locating a woman on the Wabash Trace a few years ago has perhaps spurred the effort, organized by Omaha's Rotary clubs.

Bikers and walkers also need to exercise common-sense responsibilities on the trails. Be aware of the weather. Don't walk alone in remote areas. Consider carrying a cell phone to call for help if needed.

Accidents do happen. The mile markers should provide an extra measure of security.

Already, farmers fret over Platte

W-H 6-14-04

The river — critical to irrigation — is running dry in some areas even earlier than normal this year.

LINCOLN (AP) — It's only June, and the Platte River is already running dry in some parts of central Nebraska, adding to area farmers' worries — and likely draining their pocketbooks later this summer.

As the region enters a fifth year of drought, the state's longest river is vanishing earlier this year than normal.

At Grand Island, measurements taken by the U.S. Geological Survey showed the Platte registering zero flows all last week.

"The important thing to realize is that over a 70-year record at this gauge, the average flow on June 10 is 2,095 cubic feet per second," said Dan Hitch, a federal hydraulic technician at North Platte.

Cozad-area farmer Ron Stear, who is president of Cozad Ditch Co., said his company's irrigators will be lucky to have a 30-day supply of water this summer. About one-third of them will have to supplement with groundwater, he said.

To force those irrigators with wells to tap groundwater, the ditch company will charge $70 per acre for river water this year, nearly triple the usual $25 per acre.

Farmers will pay the higher price "if it's a choice of water or no water," Stear said.

Richard Hass, president of the Central Irrigation District based in Gering, called last week's levels the lowest he's seen the North Platte River in 42 years.

His district will get only one-third of its normal allocation of storage water this season, he said.

In a typical June, flows into Lake McConaughy, the state's largest reservoir, average 1,200 to 1,300 cubic feet per second. On Thursday, they measured 80 to 90 cubic feet per second.

"It's very disturbing," said Tim Anderson, spokesman for the Central Nebraska Public Power and Irrigation District, which owns the reservoir.

The lake rose 15 feet this spring from flows that came from mountain snowpack and Wyoming reservoirs. But the lake now is at 35 percent of capacity and dropping — even before the heavy irrigation season has begun.

The district will have enough water this summer to meet demand, Anderson said.

OMAHA WORLD-HERALD

Metro

NRD plans tax hike to build new dam

■ Ensuring flood control for development in the Papillion Creek watershed is the aim.

6-15-04

By Nancy Gaarder
WORLD-HERALD STAFF WRITER

The Papio-Missouri River Natural Resources District is proposing its largest tax increase in more than 15 years, with the money to be used for building another large dam in the Omaha metropolitan area.

The district is considering a 1-cent increase per $100 of assessed valuation. For a home assessed at $100,000, the increase would translate into an additional $10 in annual taxes. As a result, that property owner would be paying the NRD a total of $40.60 in property taxes.

The NRD's tax levy is small compared with other governmental agencies. But because it is so small, the 1-cent increase would translate into a 33 percent jump in the NRD rate.

The new rate, if approved by the board, would be set at 4.06 cents per $100 assessed valuation. It would generate about $3.6 million in additional tax revenue, which would be earmarked for dam construction.

Steve Oltmans, general manager at the NRD, said more dams are needed to increase flood protection because the Papillion Creek watershed remains dangerous.

Despite years of levee and drainageway improvements and a number of large dams, the amount of flood protection in place has been just enough to keep pace with development in the watershed, he said.

This week marks the 40th anniversary of the greatest flood on record in the watershed. Eight inches of rain fell, and flooding in the Omaha area claimed seven lives.

Because of rising land costs, any large dams built in the metro area probably would have to be constructed through a public-private partnership, Oltmans said. Developers have three projects in the works, he said.

Anywhere from $2 million to $6 million in public monies would be needed to build one of the dams.

"This looks like an awful big increase in one year," board member Rich Jansen said during a recent budget briefing. People, he said, are maxed out on their taxes.

Papio-Missouri River NRD budget schedule:

July 6 — Board subcommittee meets to study tax increase. Meeting time to be determined later.

July 8 and Aug. 12 — Public comment can be made at monthly board meetings, which start at 8 p.m. at the district's headquarters, 8901 S. 154th St.

Aug. 12 — Board scheduled to vote on budget.

Sept. 9 — Board sets tax levy.

NRD to raise taxes for new dam sites

Papillion Times

By Mitch Beaumont
Times Managing Editor

Within the next 10 years, several new dam sites within the Papillion Creek watershed will need to be built, but in order for the Papio-Missouri River Natural Resources District to afford such a venture, it will have to raise its tax levy, said its General Manager last week.

As the NRD begins its budget cycle for the coming fiscal year, General Manager Steve Oltmans has requested a 1 cent increase on every $100 of valuation, he said last week. The increase would cause owners of a $100,000 home to pay an additional $10 in annual property taxes.

While a request to raise the tax levy isn't a popular decision, Oltmans said taxpayers should be cognizant of the fact that the NRD's tax levy has been decreasing for the past several years.

"Our tax levy has been going down because we're fortunate here with the valuations that keep going up with the growth. It's not like where I grew up where the valuations are going backward," Oltmans said.

"We need to remind ourselves how fortunate we are here. Percentage wise it's a tremendous percentage, but when we only get 1 percent of the taxes to start with, it's not as much as it seems. I understand it's a cumulative effect, it all adds up, but basically in Nebraska for natural resources management we spend 1 percent of the budget and 1 percent of the property taxes."

The NRD last raised its tax levy in 1988. The proposed increase could generate more than $3 million in tax revenue, which would then be used for construction of three new dams.

The tax increase is necessary now so, "When these opportunities arise we are ready to do it," Oltmans said.

Simply put, Oltmans said, the Papillion Creek watershed is running out of storage space. And the biggest reason for the lack of storage, he said, is the area's growth and development.

"We have about 150 square miles of urban development, concrete and rooftops, and that's why the Papio is one of the most dangerous watersheds in the Midwest," Oltmans said. "Because it's an urban watershed and running off of concrete and rooftops, the rate is so fast it's a surprise type of watershed rather than gradual. The only way we are going to reduce that is build more storage."

There are still a number of large details to be worked out, Oltmans said, including where the dams will be located and how much the NRD will have to pay for the land.

Of the three possible sites, Oltmans said land acquisition would cost between $5,000 and $40,000 an acre, depending on the location.

"We've got about a 10-year window to succeed on any of these otherwise the right-of-way costs will be so high that you can't afford it," he said.

One of the three sites could be publicly announced in the next few months, he said.

"I can't guarantee that," he said.

Because land acquisition costs can eat up the majority of a dam site's construction budget, Oltmans said he foresees a public-private partnership with developers, much like the Newport Landing neighborhood near Bennington.

"When we do it with a developer, they usually buy the land and then we cost share with them building the dam and offsetting the costs of the land under the lake," he said. "As a developer you spread some of that cost to the lots, but with the high price of the land it's hard to pencil that out. That's why some of the Newport Landing are upscale homes, half a million dollars and up. If you didn't have high-end houses the developer couldn't pay the bills."

NRD gives consent to well field

■ MUD moves closer to building 40 new pumping wells that would serve growth areas.

6-16-04

By John Ferak
WORLD-HERALD STAFF WRITER

A long-awaited well-field project to bring water into western Douglas and Sarpy Counties appears ready to move ahead.

After years of legal fights and fierce opposition from Saunders County residents, the Omaha-based Metropolitan Utilities District has climbed its last political hurdle for the project.

The Lower Platte North Natural Resources District Board voted 11-8 Monday to approve the Saunders County well-field project near Yutan — subject to six additional conditions.

MUD is reviewing whether the added conditions are legal, MUD attorneys said Tuesday.

"We hope this would be the end of it, and we can move forward," said Tom Wurtz, MUD general manager and president. "We've been happy to work with the NRD, and we appreciate their help."

The NRD board voted last month not to grant MUD's permit, saying the application was incomplete. MUD then threatened to sue, contending the NRD overstepped its authority.

Typically, NRD administrators handle well permits without involving the board. MUD already has received the necessary state and federal permits.

Most of MUD's 40 new pumping wells would go on 1,100 acres of farmland near Yutan.

MUD plans to pump no more than 52 million gallons of water daily, rising to more than 70 million gallons daily in the summer. The wells would provide water for future developments in western Sarpy and Douglas Counties.

Wurtz hopes to complete the well project by June 1, 2008.

The NRD's conditions were actually "assurances" that MUD attorneys spelled out in a letter Thursday to NRD General Manager John Miyoshi.

MUD said it would install flow meters for each well, provide data sampling for any contaminants from the former Mead ammunitions plant, install data loggers on all wells and comply with other regulatory conditions set forth in its permits.

MUD also has agreed to construct a comprehensive groundwater model of the Platte River West region. The study will take into account the impact of MUD's well field, the City of Lincoln's well field at Ashland, Ashland's municipal wells, and cleanup efforts on the contamination plume in Mead.

"The Mead plume will have no impact on our well field," Wurtz said. "That's been a major misconception out in the public in recent months."

Also, MUD has agreed to participate in a committee with the Lower Platte North and Papio-Missouri River NRDs and affected landowners.

Bridge to involve fewer frills, more time, money

By C. David Kotok
WORLD-HERALD STAFF WRITER

The revised plan for the Omaha-Council Bluffs link will cost up to $4 million more than originally estimated.

Omaha and Council Bluffs can be linked by a landmark pedestrian bridge. All it will take is another year, fewer frills and an extra $4 million.

As local, regional, state and federal officials reviewed the new plans Wednesday for the pedestrian bridge, Mayor Mike Fahey put them on notice that Omaha taxpayers would not make up the difference.

But an extra $4 million is not "a deal breaker," said Jennifer Mahlendorf, an aide to Fahey.

The initial low bid in March of $44.9 million — more than $22 million more than budgeted — put the pedestrian bridge in jeopardy of being scaled back to insignificance or canceled.

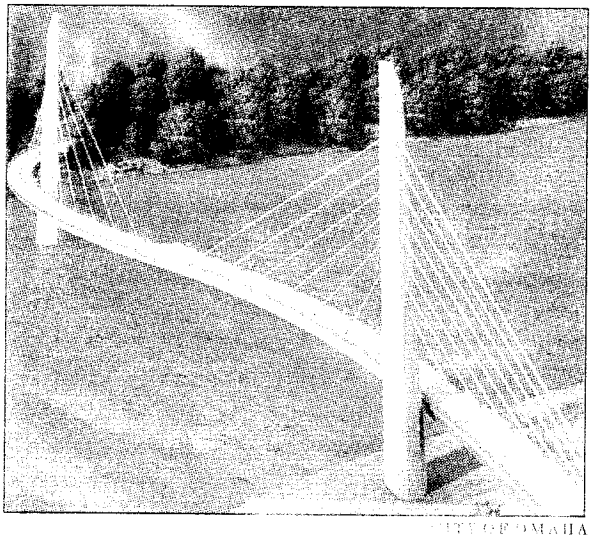
Omaha and Council Bluffs can still have a suspension bridge with a gentle "S" curve and twin towers representing the two states, the officials were told during a City Hall meeting Wednesday. But it would be difficult at the original $22.6 million project cost.

Omaha Parks Director Larry Foster said the total cost is likely to be 10 percent to 15 percent more than the original estimate, or an additional $2 million to $4 million.

Mahlendorf said former U.S. Sen. Bob Kerrey has assured the city that he would be actively involved in finding money from federal or philanthropic sources to complete a signature bridge. He obtained nearly $19 million in federal funds to underwrite the project in 2000 before he left office.

Most of the cost-trimming changes made to the bridge design aren't apparent to the casual observer, said Foster and George

*See **Bridge:** Page 2*



CITY OF OMAHA

An updated rendering shows the revised design for the pedestrian bridge over the Missouri River between Omaha and Council Bluffs.

Bridge: Revised plan keeps signature twin towers

Continued from Page 1

Haecker, the Omaha architect involved in developing the twin-tower design.

"The bottom line is, we were able to keep the concept," Haecker said.

Among the changes from the original plan:

- Fewer cables lead from the towers to the concrete bridge.
- The cables will be constructed with a plastic coating rather than stainless steel.
- An elevator to increase bridge access on the Nebraska side has been eliminated, but the spiral walkway remains.
- The bridge's landing in Iowa has been shortened, dropping into the planned park rather than traveling a quarter-mile inland to the Council Bluffs levee.

Other cost cuts could come with the selection of lighting, railings and coloring, Haecker said. The redesign was an attempt to keep the outstanding features while cutting items that could be added back in the future, he said.

The one-year delay in the project is insignificant, Haecker said.

"This bridge is going to be there for 100 years plus," he predicted.

The opening of the bridge, initially planned for summer 2006, is now expected by summer 2007.

Two major condominium developments planned near the bridge base in Omaha and in Council Bluffs also seem to have slipped behind schedule.

Originally, Riverfront Place on the Nebraska bank and One Renaissance Center behind the Iowa levee were projected to open their first condo towers about the time of the bridge completion.

After the bridge bids were rejected, construction executives told Figg Bridge Co., based in Tallahassee, Fla., that the project was much more complicated than the company had thought, particularly the footings and foundations for the twin-spired design.

Figg, the primary architect and engineer on the project, made a number of engineering changes to ensure that the bridge could be constructed without creating prohibitive costs.

In addition to the federal funds, the Nebraska and Iowa state governments put up $1.5 million each, and the Papio-Missouri River Natural Resources District committed $1 million.

W-H
6-21-04

A less expensive footbridge

The pedestrian bridge planned for the Missouri River would complement Omaha's riverfront development. With its graceful lines and twin masts, the structure would advance the message that this is a regional city of can-do spirit and vision.

The dramatic nature of the bridge could heighten the sense, for local residents and visitors alike, that Omaha is blessed with a growing array of amenities lifting it to a higher level of development and ambition.

That would be a valuable message to convey, in particular, to the large number of business executives who come to Omaha for sessions at Gallup University's riverfront campus — and then return to Chicago, St. Louis, Denver, Dallas and elsewhere to ponder future business investment.

Budgetary clouds have hung over the bridge project in recent months, however, and it remains to be seen whether they ultimately can be dispelled.

The initial bids in March came in at $44 million — a staggering $22 million above the original projection. Such expense would put the project far outside the range of practicality.

Omaha officials pledged to take a new look at the project, and last week they offered a note of reassurance. Their revised plan retains the basic design but trims the costs so that they are projected to be only $2 million to $4 million above the original estimate. Construction would be delayed a year, with an opening in 2007.

It would be desirable if the bridge construction can be held within those limits. But the experience with the March bids demonstrated the need for wariness. Now and in coming months, Omahans will need reassurance that the costs can be held to realistic levels.

If that crucial requirement can be met, the city should be well served. The bridge project should move forward, under a watchful fiscal eye.

W-H
6-21-04

Shared opportunities

Improved Council Bluffs-Omaha relationship benefits both cities.

The fireworks will come from the Council Bluffs side of the river when Omaha celebrates its 150th birthday July 17.

When Omaha officials asked for the use of a park to stage the fireworks, there was cooperation for the most part from the Council Bluffs City Council. Only a lone voice of dissent hearkened back to days when verbal fireworks more often marked the two cities' relationship.

The improved relationship is one that Omaha Mayor Mike Fahey and Council Bluffs Mayor Tom Hanafan have worked to encourage.

In various settings for different projects, the two repeatedly have noted that the two cities need to see the area as one community.

What helps one often helps the other. Omaha officials share information about Council Bluffs and other surrounding cities in economic development efforts. And Council Bluffs mentions its proximity to Omaha in its economic development promotions.

Omaha, for instance, is drawing hundreds of workers relocating to the new Union Pacific Railroad headquarters. Council Bluffs, which has launched promotional efforts to attract some of those workers as Iowa residents, will almost surely succeed in that quest.

Working together on quality-of-life projects also has helped the two cities. A Missouri River pedestrian bridge in the planning stages is one symbol of that. Joint efforts also helped fund a $225,000 project to put Lewis and Clark exhibits in several parks on both sides of the river.

A major, three-year study of eastern Nebraska and western Iowa, involving Council Bluffs and Omaha as well as Lincoln and the surrounding areas, is due to be released this fall. It was commissioned because large population growth is expected to bring many opportunities and challenges to the entire region in the next 50 years.

Working together, with each city helping to constructively build up the others, would almost surely help to create even more opportunities for everyone.

Corps of Engineers wins river ruling

■ Changes to the Missouri River meant to protect endangered species won't be required.

6-22-04

WASHINGTON (AP) — The Missouri River can operate without changes sought by environmentalists to save endangered fish and birds, a federal judge ruled Monday.

U.S. District Judge Paul Magnuson ruled Monday in favor of the Army Corps of Engineers on all counts. His 51-page order came nearly a year after a different federal judge ordered the changes and, when corps leaders refused to act, cited them for contempt.

Magnuson, a St. Paul, Minn., judge, blocked the contempt citation last year after taking over the river litigation.

Conservation groups will weigh whether to appeal.

"Americans deserve more than ecological decline, economic stagnation and political stalemate along the Missouri River," said Rebecca Wodder, president of the lead group, American Rivers. "We will not give up the fight to save this river for future generations."

The conservationists, along with the fishing and recreation industry in Montana and the Dakotas, want a more seasonal ebb and flow. The downstream interests argue that spring rises and low summer flows would forever halt barge shipping and cause flooding.

The corps said the ruling shows that the agency has balanced all the demands on Missouri River water.

"That's been our goal forever, is to look at all the authorized purposes, plus the Endangered Species Act, and see if we can't make sure that we serve all of these purposes," said Paul Johnston, spokesman for the corps.

The corps this year updated river operations that had essentially gone unchanged for more than four decades. The pallid sturgeon and two shorebirds, the interior least tern and piping plover, were placed on the endangered and threatened species lists decades after the old management plan took effect.

The U.S. Fish and Wildlife Service ordered the corps more than three years ago to elevate flows in spring and reduce summer water levels to protect habitat and encourage spawning and nesting.

But under the Bush administration, service biologists backed off, saying in December that summer water levels can be kept high enough for barge shipping if the corps also builds new habitat for the sturgeon. The service also says the birds can survive without the changes.

The service said that instead of creating a more seasonal ebb and flow to sustain fish and birds, the corps can comply with the Endangered Species Act by building 1,200 backwater acres of pallid sturgeon habitat by July 1.

Papio NRD will raise taxes for new dam sites

Bellevue Leader 6-23-04

By MITCH BEAUMONT
For the Leader

Within the next 10 years several new dam sites within the Papillion Creek watershed will need to be built, but in order for the Papio-Missouri River Natural Resources District to afford such a venture, it will have to raise its tax levy.

As the NRD begins its budget cycle for the coming fiscal year, General Manager Steve Oltmans has requested a 1-cent increase on every $100 of valuation. The increase would cause owners of a $100,000 home to pay an additional $10 in annual property taxes.

While a request to raise the tax levy isn't a popular decision, Oltmans said taxpayers should be cognizant that the NRD's tax levy has decreased.

"Our tax levy has been going down because we're fortunate here with the valuations that keep going up with the growth. It's not like where I grew up where the valuations are going backward," Oltmans said.

"We need to remind ourselves how fortunate we are here. It's a tremendous increase percentage-wise, but when we only get 1 percent of the taxes to start with, it's not as much as it seems.

"I understand it's a cumulative effect; it all adds up, but basically in Nebraska, for natural resources management, we spend 1 percent of the state's budget and 1 percent of the property taxes."

The NRD last raised its tax levy in 1988. The proposed increase could generate more than $3 million in tax revenue, which would be used for construction of three new dams.

The tax increase is necessary now, Oltmans said, so, "when these opportunities arise we are ready to do it."

Simply put, Oltmans said, the new dams are necessary because the Papillion Creek watershed is running out of storage space. And the biggest reason for the lack of storage, he said, is because of the growth and development within the watershed.

"We have about 150 square miles of urban development, concrete and rooftops, and that's why the Papio is one of the most dangerous watersheds in the Midwest," Oltmans said. "Because it's an urban watershed and because water running off of concrete and rooftops is so fast, it's a surprise type of watershed rather than gradual. The only way we are going to reduce that is to build more storage."

There are still a number of large details to be worked out, Oltmans said, including where the dams will be located and how much the NRD will have to pay for the land.

Of the three possible sites, Oltmans said land acquisition would cost between $5,000 and $40,000 an acre, depending on the location.

"We've got about a 10-year window to succeed on any of these otherwise the right of way costs will be so high that you can't afford it," he said.

One of the three sites could be announced in the next few months, he said.

"I can't guarantee that," he said. "But based on our experience in public-private partnerships, it could happen that soon."

Because land acquisition costs can eat up the majority of a dam site's construction budget, Oltmans said he foresees a public-private partnership with developers, much like the Newport Landing neighborhood near Bennington.

"When we do it with a developer, they usually buy the land and then we cost share with them building the dam and offsetting the costs of the land under the lake," he said.

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Tax incentives OK'd for riverfront condos

6-23-04

By C. David Kotok
WORLD-HERALD STAFF WRITER

Riverfront Place, the upscale condo community planned for Omaha's riverbank, could start offering purchase options by the end of the summer and break ground next spring.

The City Council moved the project a step closer to reality Tuesday by unanimously approving changes in the riverfront plan that provide the condo developers with nearly $2.9 million in tax incentives.

Ross L. Robb, one of the developers of the $35 million projects, said his group can't move until the plans have full city approval. During the summer, the council will be asked to approve the detailed plans.

Mayor Mike Fahey picked the out-of-town developers from among competing proposals for the six acres just south of the Gallup University campus.

Robb, who is from Tempe, Ariz., said the first phase of the plan involves a 36-unit condo tower and 18 townhouses. A second tower and nine more townhouses, along with a restaurant and other possible commercial space, are part of the overall plan.

As with similar projects, financing for each phase comes through after obtaining firm purchase commitments for at least half the units.

There have been some murmurs of concern because the project Web site, www.riverfrontplace.com, hasn't been changed since last year, and those who contacted the developers haven't received any updates.

The original plan was to tie the opening of the first condo tower to the opening of the pedestrian bridge across the Missouri River. That project now has been delayed at least a year.

Robb said Riverfront Place remains on pace for a 2006 opening.

"But we can't do anything until we get all the city approvals," he said.

Wetlands program seeking farmers

■ $26 million is available to reclaim 18,200 acres along the Missouri River by 2007.

6-24-04

By John Ferak
WORLD-HERALD STAFF WRITER

UNION, Neb. — Federal agriculture officials are looking for more farmers like Dave Burden.

Burden in 2002 signed up for a guaranteed cash payment, in exchange for converting 165 acres of his Cass County farmland back to Missouri River wetlands.

Over a 12-year period, more than 30,000 acres of wetlands have been restored throughout Nebraska as part of a federal wetland reserve program.

Now another $26 million is available to Nebraska farmers along a 200-mile stretch of the river from Ponca to Rulo as part of an enhanced wetlands reserve program. The goal is to restore an additional 18,200 acres of flood plains land by 2007.

"I'm big into the environment and wildlife," said Burden, who lives in Lincoln but owns farmland near Union. "Some people might not want to (enroll) if they raise more money in corn and soybeans. For me, I didn't see that happening."

Under the new, enhanced program, landowners can choose a 10-year restoration cost-share deal, a 30-year conservation easement or permanent easement. Payments will vary based on the option that is chosen.

"We don't expect any opposition," said Patrick McGrane, spokesman for the U.S. Department of Agriculture's Natural

See Wetlands: Page 2

Wetlands: Farmers recruited

Continued from Page 1

Resources Conservation Service, which is heading the program. "This is entirely voluntary and optional to them."

Several state and federal agencies are committing about $20 million to acquire land for the easements. The additional $6 million will be used to create dikes and excavate where necessary to create the wetlands.

Kirk Nelson, assistant director of the Nebraska Game and Parks Commission, said landowners who enroll will maintain ownership and control of their land. He said he hopes they will open the wetlands for hunting, fishing and birdwatching.

What's next

Information sessions about the wetlands project will begin today:

Cass County: 6:30 p.m. today, Plattsmouth Eagles Club, 209 S. 23rd St.

Washington County: 5:30 p.m. Tuesday, Boyer Chute National Wildlife Refuge, Fort Calhoun.

Burt County: 5:30 p.m. June 30, Tekamah First National Bank, 448 S. 13th St.

Thurston County: 5:30 p.m. July 1, Walthill Fire Hall, 323 Main St.

Dakota County: 6:30 p.m. July 6, American Legion Post, 117 S. 21st St., Dakota City.

Meetings in the other counties involved will be announced later.

Corps says required habitat created

■ The U.S. Fish and Wildlife Service is expected to endorse the effort on the Missouri River.

6-25-04

By Henry J. Cordes
WORLD-HERALD STAFF WRITER

By dredging to open Missouri River side channels and carving notches in dikes, the Army Corps of Engineers says, it has created the shallow water habitat a federal wildlife agency has required for an endangered fish.

That engineered habitat, along with a court decision earlier this week, should clear the way for the corps to keep water levels up during summer months to levels that won't threaten the operations of Nebraska's power plants, marinas and barges that depend upon the river, a state water official said.

"Right now, as for the immediate future, things look reasonably good as far as Nebraska is concerned," said Roger Patterson, director of the Nebraska Department of Natural Resources.

Earlier this year, the Corps of Engineers produced a new plan for how it would operate its dams on the Missouri River. Key to the plan was an ambitious proposal to create 1,200 acres of shallow water habitat by July 1 for the endangered pallid sturgeon.

The ancient fish, which has inhabited the river's depths for millions of years, has struggled for survival over the last half-century since the Missouri River was dammed and straightened to control flooding and create a highway for barges.

without creating that habitat, the U.S. Fish and Wildlife Service had told the corps it would have to drop river levels this summer, possibly to levels that would threaten the industrial and recreational interests that have come to depend on a high and stable river during summers.

Officials with the corps said this week that they are nearing completion on up to 1,800 acres of such habitat.

The federal wildlife agency still needs to officially sign off on the new habitat. But given how closely the agency has worked with the corps since it launched the plan earlier this year, that approval is expected before the 1st.

The corps created the habitat by carving notches in more than 500 wing dikes that extend into the river, creating the navigation channel. The idea is to allow water to flow through the notches, creating the slow-moving shallow water that juvenile sturgeon are said to need to survive.

The corps also has dredged in 23 locations to open up side channels that had long been closed off from the river, creating more shallow waters.

Endangered shorebirds on the river also benefited from that effort, said Paul Johnston, a spokesman for the corps. Sand dredged up at one site near Ponca, Neb., was pumped into the main river channel, creating new sandbars. Endangered plovers almost immediately began nesting on the new sand, Johnston said.

The river advocacy group American Rivers had challenged the corps and wildlife service plan for the river, arguing that it did not do enough for the sturgeon and two endangered shorebirds. But a federal judge on Monday endorsed the plan, a decision environmental groups may yet appeal.

Environmentalists called the ruling a setback for the river and the wildlife that depends on it. But Patterson and David Cookson, an assistant attorney general who represented Nebraska's interests in the litigation, said the issue is more complex than that.

The corps, they said, was able to convince the court that its effort to artificially create habitat for the pallid sturgeon would benefit the fish more than dropping the river level.

And the wildlife agency is still calling for the corps in future years to create a high-water "spring rise" on the river as a spawning cue for the endangered fish. The spring rise the wildlife agency adopted was similar to one Nebraska had proposed during efforts to settle the long-running Missouri River dispute.

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Sunday World-Herald

JOHN GOTTSCHALK, *Publisher*
LARRY KING, *Executive Editor* FRANCIS L. PARTSCH, *Editorial Page Editor*
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Steady on the river

A nifty piece of jurisprudence clarifies procedure in managing the Missouri.

A federal judge in Minnesota has brought order to the debate over Missouri River management policies.

U.S. District Judge Paul Magnuson, in a 51-page ruling, disposed of river-related lawsuits involving more than two dozen litigants — state governments, Indian tribes, businesses and environmental organizations seeking changes in the U.S. Army Corps of Engineers management plans for the river.

Magnuson upheld the corps' judgments on point after point. His approval extended to a 2003 document in which the U.S. Fish and Wildlife Service dropped parts of a 2000 plan to help propagate federally protected least terns, piping plovers and pallid sturgeons. The 2003 document was incorporated in the corps' 2004 master plan, which Magnuson also upheld.

Alternative ideas about the management of the river have been advanced by environmental groups as well as regional and commercial entities. This newspaper editorialized favorably about the notion of raising water levels in the spring and lowering them in the summer — a feature of the 2000 document that was partially abandoned in the 2003 document.

But we ultimately must applaud Judge Magnuson's decision. It has cleared the lines of authority and highlighted information that the public could find useful in negotiating the complicated nuances of river management.

A contrived "spring flood," for example, while it might provide a "spawning cue" for the pallid sturgeon, isn't necessarily a savior of the terns and plovers.

The original theory was that a rush of high water would scour the riverbed of vegetation and create sandbars, on which the birds make their nests and care for their young.

Judge Magnuson, referring to the 2003 plan, wrote that "the corps set forth, and the (Fish and Wildlife Service) agreed, that . . . spring and summer floods would not create sandbar habitat but would *potentially destroy beneficial sandbar habitat* (emphasis added)." This plan was based on information obtained through study of the 2000 Fish and Wildlife document, he said.

We have noted previously that human efforts to help one wild creature don't necessarily help other wildlife. This is a textbook example of why these management decisions should not be made piecemeal, in the courtroom, as opposed to being considered with care as part of an overall plan.

Some accounts of the ruling painted it as a clear victory for the barge industry and a setback for federally protected creatures. This view is probably popular among those who see the corps as a dam-building, channel-dredging behemoth devoid of environmental responsibility.

That is not our view of the corps. It certainly isn't the picture that shines through Judge Magnuson's ruling.

Magnuson wrote that the corps is not required to prioritize the various purposes of its management — flood control, irrigation, navigation, power, domestic and sanitary purposes, wildlife and recreation. At the same time, he said, it has a re-

Continued

sponsibility to consider all of them and find a balance.

The corps' plan, Magnuson noted, "contains additional elements, such as a drought conservation plan, Gavins Point Dam summer releases, accelerated construction of shallow water habitat and adaptive management, that together avoid jeopardy to the plover and tern."

The agency has pledged to create 20,000 acres of sturgeon-breeding shallow water habitat. Last week, it finished the first installment of 1,200 acres.

So the wild creatures aren't neglected, even in the broad management plans of the corps.

How about the spring flood that has become such a symbol in the debate?

It is still in the picture. The 2000 plan allowed a spring rise "only in the event that conditions permitted," Magnuson noted. The 2003 document "similarly permits a spring rise provided water conditions are favorable." This year, he said, conditions were not favorable.

"Whether a spring rise will occur in 2005 will depend on the status of water conditions in 2005," he said.

In the plan, the corps also is directed to "initiate an experimental spring pulse to assist and inform the process of establishing a long-term flow plan."

Nebraska was a loser on a couple of points in the lawsuit. Magnuson rejected a public power district contention that minimum flow levels are required. And he declined to bar the corps from deviating from its plan in an emergency, as Nebraska and some other state governments have requested.

But if drought conditions persist around the Missouri's Rocky Mountain headwaters, minimum stream flows become a paper tiger. And the authority to deviate from the plan in an emergency is simply good management.

Where all this is headed, nobody knows. Drought is a reality with unpredictable potential. Economic evolution has made the barge industry a less prominent contender for a place at the table.

The flood-control and electricity-generation responsibilities of river management continue to affect hundreds of thousands of people throughout the river basin. And, yes, a long-term impulse exists to restore the river as a place of natural beauty and outdoor recreation.

Balancing these concerns is a heavy responsibility for the federal agencies charged with the task.

On point after point, Magnuson referred back to the law and declined to second-guess decisions made by the corps, or the Fish and Wildlife Service, under the law. His ruling, even if it eventually is appealed and superseded, stands as a model of judicial restraint.

The message to all in the Missouri River debate should be clear. If you don't like what the law now says, don't just file another lawsuit. In this and many other matters, the proper agency for changing public policy is Congress.

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A valuation squeeze

Wholesale change in assessments a poor means of keeping property values fair and current.

Why anyone would want to be a county assessor is one of the harder-to-fathom mysteries of modern times. The job could hardly have been designed with fewer natural allies.

But as long as we're going to have a system of financing local government that depends on property taxes, a fair method of assessing property and thus ensuring equity is necessary. Thus we have county assessors.

The accuracy of the assessor's work is tested each year by comparing two numbers. One is the total of the selling price of all property that changed hands in the previous year. The other is the total valuation of all that sold property at the beginning of the previous year.

State law requires the total valuation of sold property to be at least 92 percent of the total selling price. Officials selected 92 percent as the threshold to discourage overassessments.

(One peculiar characteristic of the sales-assessment ratio is that it never tells what is going on in real time. Even the most current sales assessment figure is a past-tense snapshot, a year or more behind current market conditions and reassessments.)

Roger Morrissey, a professional appraiser whom Douglas County voters installed as their assessor in 1999, has been working to establish a computer baseline on each parcel after many years of predecessors who were less aggressive in keeping the records in order and the valuations in line with rising market values.

A recent look at Morrissey's progress by The World-Herald illustrated the task. More than 6,200 homes were sold last year, with their average tax valuations coming out at 85 percent of the selling prices. While three of every 10 of the valuations met or exceeded the 92 percent threshold and roughly one-third were close — between 80 percent and 92 percent — the final one-third of the parcels, approximately, carried valuations below 80 percent of selling price.

For informational purposes, the news story compared these results with those of Sarpy County. Critics of Morrissey's office sometimes also cite Lancaster County figures or statewide figures.

But Douglas County is unlike any other jurisdiction in Nebraska. For purposes of evaluation, Morrissey's situation may best be judged in the light of the magnitude of the task.

Morrissey's office is responsible for the assessment of 174,000 parcels of real estate; the comparable number in Lancaster County, the next largest, is 94,000. Both assessors employ between 45 and 50 peo-

ple. With essentially the same number of staff, Morrissey's office has almost twice the workload.

Many of Douglas County's taxable parcels are older homes, where upkeep and improvements are a factor in estimating values. (Newer homes, which are more predominant in Sarpy County, for example, are often more uniform and thus easier to assess.)

Morrissey estimated that his people need two more years to update inaccurate old records by visiting and evaluating the properties, house by house.

Douglas County also has a certain number of designer homes — structures designed by architects or uniquely remodeled. They are sometimes more difficult to evaluate by the usual method of looking at the recent selling price of comparable structures.

All told, Morrissey and his crew have a large and often thankless job.

A survey of urban counties in the region for 2003 indicated departmental budgets, based on spending per assessable parcel, ranging from $18 in Jackson County, Mo., to $33 in Johnson County, Kan., both in the Kansas City area.

Douglas County came in at $13.72. Even after the assessor's request was cut by $500,000, the County Board had been asked for the equivalent of only $16.55, well beneath the lowest of the other counties.

Some might say the taxpayers of Douglas County are getting a bargain. But is "bargain" the right word for the inequities associated with having one-third of the parcels assessed substantially below their market value?

A quick-fix proposal has materialized among some county commissioners in recent days. Rather than patiently appraising and updating each parcel, this proposal would jack up the valuations neighborhood by neighborhood, thereby giving Morrissey higher numbers when the 2004 sales-assessment ratios are calculated.

That's a great idea, except that it's a terrible idea. An across-the-board increase in valuations might cosmetically improve the numbers. But it would perpetuate any inequities that existed neighbor to neighbor and lock them in at a higher level.

So reject the quick fix, commissioners, and show some faith in this professional appraiser.

And if the County Board really wants to help, it might listen a little more closely when the assessor and his staff ask for the financial support it takes to do this difficult job promptly and professionally.

Douglas County overhauls

by Mary Lou Rodgers 6-29-04

After a year of preparation, the Douglas County Commissioners approved an overhaul of subdivision regulations in May that will affect property owners and developers.

One of the most significant new rules requires landowners dividing 20 acres or less of land from a larger parcel to submit a plan for approval.

Previously, by state statute, only 10-acre plots that were being divided needed to go through the Planning Commission and County Board approval process. Those dividing larger lots just had to record the deed.

"The county can be more restrictive than the state statute," Barb Frolich, the planning and zoning coordinator explained. "This gives the Planning Board more insight into what is going on out there."

One of the concerns of the increasing number of smaller plots, she said, is the availability of water.

For the past year, the Planning Commission and Douglas County Environmental Services have been reviewing and rewriting subdivision regulations, which the County Board approved at their May 18 meeting.

The document contains expanded definitions of terms and the addition of new ones. The county engineer, for instance, suggested a definition for "right-of-way," that is clearer than the old definition, Frolich noted. (see p. 15)

Another innovation is the requirement that subdivision plats be submitted in an electronic image along with the paperwork.

"It makes it easier for the county engineer to review," Frolich said.

The new regulations also list the agencies a plat is sent to for review. If the subdivision is close to a city, the plat is sent to that city as well.

The regulations also outline the hearing procedure and the county engineer's standards.

Another section addresses the emergency management system and the new standards for sirens. For all subdivisions with 10 lots or more not within hearing distance of an existing civil defense warning siren, a siren system that meets county standards must be installed.

Conservation outlots in subdivisions now require a deed that lists the homeowners as the owners of the property.

Storm water regulations are included in the new rules, along with erosion control guidelines. The erosion control guidelines will help prepare the county for the NPDES national water quality controls, which will soon be enforced.

Developers submitting plans for subdivisions will now be asked about erosion control, tree canopy and other items.

There is now a requirement that the plan includes preservation of 75 percent of the tree canopy.

"It encourages developers to save trees," Frolich said. "If they must remove them, they must replace them."

There is also a section on cluster subdivisions. The rules permit cluster subdivisions where lots are not regulation size or that have reduced setbacks in order to provide a common area, protect topographical features or permit private pedestrian and vehicular access.

Creek setback requirements change

One change in the county's regulations caused some concern among rural property owners when it was first proposed. The rule increases the setback area from a creek that must be maintained for erosion and water quality control.

Some landowners thought that meant they couldn't build a barn near a creek on their property, but Frolich explained that the ruling applies only to any named Papillion Creek or tributary.

The setback area for named creeks is now equal to three times the channel depth, plus 50 feet, from the top of the bank. Grading, stockpiling and other construction activities are not allowed within the setback area.

Another change adopted in April sets requirements for driveway access in order to provide safe access to county roads.

Two-lot subdivisions must have a shared driveway access, and larger subdivisions with driveways less than 300 feet apart must provide a public access road connecting to the county road.

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Continued

regulations for subdivisions

Douglas County Commissioners approved an overhaul of subdivision regulations in May that will affect property owners and developers. Shown is the Meadow Ridge development near Bennington, one of several in the area bringing new students in Bennington Public Schools.

Accessory building rules for Douglas County

Supplementary regulations address accessory building size and placement, height limitations, lot size requirements, home size and mobile home park requirements.

On May 18, the Douglas County Board of Commissioners approved these limitations for residential accessory building size:

- Lot size - less than 10,890 sf (1/4 acre) - 1,000 sf;
- 10,891 sf to 21,780 sf (1/2 acre) - 1,800 sf;
- 21,781 sf (1/2 acre to 1.99 acres), 2,600 sf;
- 2.0 acres to 4.99 acres, 4,500 sf;
- 5.0 acres to 9.99 acres, 5,600 sf;
- 10.0 acres to 19.99 acres, 8,700 sf;
- 20.0 acres or more, 16,000 sf.

Copies of the subdivision regulations for Douglas County are available at the Douglas County Environmental Services office at 3015 Menke Circle, Omaha, NE 68134. Call 444-6181 to request information.

A complete copy (160 pages) costs $50. The office will fax copies or make copies of portions of the regulations for 50 cents a page. Planning and Zoning Coordinator Barb Frolich said she is working on putting the entire set of regulations online so that they will be readily accessible at no cost.

One of the new definitions:

RIGHT-OF-WAY: a strip of land occupied or intended to be occupied by a street, crosswalk, railroad, road, electric transmission line, oil or gas pipeline, water main, sanitary or storm sewer main, shade trees, or for any other special use.

The usage of the term "right-of-way" for land-platting purposes shall mean that every right-of-way hereafter established and shown on a final plat is to be separate and distinct from the lots or parcels adjoining such right-of-way and not included within the dimensions or areas of such lots or parcels.

Rights-of-way intended for streets, crosswalks, water mains, sanitary sewers, storm drains, shade trees, or any other use involving maintenance by a public agency shall be dedicated to public use by the maker of the plat on which such right-of-way is established.

Johanns offers Panhandle helping hand

■ As drought drags on in the region, the governor outlines options for federal aid.

By David Hendee
WORLD-HERALD STAFF WRITER
6-30-04

Despite recent rains, two weeks of dry, windy weather could push Nebraska's premier rangeland deeper into drought, Gov. Mike Johanns said Tuesday after a western tour.

"They are right at the edge," Johanns said from Alliance. "It's green in the road ditches, but out in the pastures it's slim pickings."

Johanns met with ranchers and farmers in Alliance and Sidney.

Severe to exceptional long-term drought remains entrenched across the region.

For example, precipitation totaled 7.24 inches — or 47 percent of normal — at Scottsbluff during the 356-day period from July 1, 2003, through June 20, according to the U.S. Drought Monitor.

At least 40 percent of the winter wheat fields, ranges and pastures in Nebraska, Wyoming, Kansas and Colorado were rated poor to very poor last week by the U.S. Department of Agriculture.

Johanns said all he can do is help farmers and ranchers access federal aid to help them survive another year.

"It doesn't replace a good rain," he said, "but it'll help."

A veterinarian at Alliance said Sand Hills ranchers have trimmed their herds by a third in recent years because of drought.

In Sidney, Johanns greeted about 125 farmers and ranchers during lunch at the University of Nebraska's High Plains Agricultural Laboratory.

The governor reminded the producers that last week's drought disaster-area designation by the USDA for 19 western Nebraska counties gives farmers there access to an emergency low-interest loan program.

He also noted that federal ag officials have released Conservation Reserve Program grasslands — which typically are not farmed or used for cattle forage — for emergency grazing or harvesting for hay.

Charles Hibberd, director of the Panhandle Research and Extension Center at Scottsbluff, said the USDA's decision to release the grasslands for grazing is a huge help to cattlemen with herds of cows and calves.

"The fact that we're now in our fifth year of extremely dry conditions ... these grasses don't recover very well," Hibberd said of pastures. "They don't grow as well, they're not as healthy, and they just don't produce as much forage."

CRP acres also were released for grazing last year in Nebraska's western drought zone.

The governor was greeted in Sidney by recently greened pastures and nearly harvest-ready wheat fields quenched by one to two inches of rain in recent weeks.

The revived fields and prairie, however, only disguised the depth of the drought, said Rod Horn, general manager of the Sidney-based South Platte Natural Resources District.

On some area farms, farmers lost the opportunity to recharge the aquifer under their land by continuing to pump groundwater when it rained, Horn said.

"For the most part, people in the communities have cut back somewhat on their use of water and some irrigation systems shut down, but not all of them," he said. "The drought is still a real concern."

Despite recent rain, the soil remains extremely dry after years of below-normal precipitation in the Panhandle. A monitoring well west of Sidney is approaching a record-low level registered two years ago.

Johanns said he saw no panic. He said the ranchers he met seemed to have ice water in their veins.

"They're the most resilient people I know," he said. "They continue to believe, rightfully so, that it will rain again."