

### IX.5.3 FORECAST SYSTEM PREPROCESSOR DATA BASE ACCESS

#### Introduction

The Preprocessor Data Base (PPDB) [[Hyperlink](#)] contains the observed data and forecast data used by the Preprocessor Functions to produce time series.

#### Access Routines

A description of the routines that can be used to access the PPDB can be found in Section IX.3.4 [[Hyperlink](#)].

#### Access Notes

See Section IX.5.1 [[Hyperlink](#)] for general access information.

Routines RPPDCO and RPDHSH must be called before data can be read from the PPDB. These routines read control information from the PPDB into common blocks used by the read/write routines.

Routines WPPDCO and WPDHSH must be called after data has been written to the PPDB. These routines write control information from common blocks used by the read/write routines to the PPDB. WPPDCO must be called if any control information has changed including adding a new day of daily data. WPDHSH must be called only if stations have been added, changed or deleted.

If data has been written to the PPDB all files must be closed by calling routine UCLOSL.

#### Examples

The following example shows how to:

- o write and read PP24 data value for a station
- o write and read STG data value for a station

```
PROGRAM MAIN
C
CHARACTER*4 TYPE,UNITS,XTIME
CHARACTER*8 STAID
C
C WPD1S AND RPD1S VARIABLES
PARAMETER (NDTYPE=1)
CHARACTER*4 DTYPE(NDTYPE)
PARAMETER (NDTYPR=1)
CHARACTER*4 DTYPR(NDTYPR)
PARAMETER (LPNTRS=10000)
PARAMETER (LIDATA=5000)
INTEGER*2 MSNG,IPNTRS(LPNTRS),IDATA(LIDATA)
C
C WPD1RS AND RPD1RS VARIABLES
PARAMETER (NRTYPE=1)
CHARACTER*4 RTYPES(NRTYPE),RUNITS(NRTYPE)
DIMENSION NVLPOB(NRTYPE),NUMOBS(NRTYPE)
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DIMENSION IWRITE(NRTYPE),LSTHR(NRTYPE)
PARAMETER (NOBS=2)
DIMENSION OBS(NOBS)
PARAMETER (NMIN=1)
DIMENSION MIN(NMIN)
PARAMETER (LWKBUF=500)
DIMENSION WKBUF(LWKBUF)
C
C   INCLUDE 'upagex'
C   INCLUDE 'udebug'
C
C   INCLUDE 'pdbcommon/pdenqx'
C
C COMMON BLOCKS HDFLTS AND FCTIME ARE NOT FROM INCLUDES BECAUSE
C VARIABLES LOCAL AND NLSTZ ARE IN BOTH
C
C                                     *--> FROM HCLCOMMON.HDFLTS
C HYDROLOGIC COMMAND LANGUAGE USER DEFAULTS
C   COMMON /HDFLTS/ TIME(3),HNAMRF(2),METRIC,ZOFF,CLKZON,INTDFL,
C *   XOPEN(5),TDATES(7),LOCAL,NLSTZ,NHOPDB,NHOCAL
C   INTEGER TIME,HNAMRF,ZOFF,CLKZON,XOPEN,TDATES
C                                     *--> FROM COMMON.FCTIME
C   COMMON /FCTIME/ IDARUN,IHRRUN,LDARUN,LHRRUN,LDACPD,LHRCPD,NOW(5),
C *   LOCALF,NOUTZ,NOUTDS,NLSTZF,IDA,IHR,LDA,LHR,IDADAT
C
C
C SET INPUT/OUTPUT UNIT NUMBERS
C   LP=6
C   ICD=5
C
C SET DEBUG OUTPUT UNIT NUMBER AND DEBUG AND TRACE INDICATORS
C   IOGDB=6
C   IPDTR=0
C   IPDDB=0
C
C OPEN INPUT/OUTPUT FILES
C   CALL UPRIMO
C
C GET USER NAME
C   CALL HGTUSR (PUSRID,IERR)
C
C PRINT USER IDENTIFIER
C   WRITE (LP,*) 'USER IDENTIFIER = ',PUSRID
C
C SET TIMING VARIABLES
C   LOCAL=7
C   NLSTZ=-5
C   LOCALF=LOCAL
C   NLSTZF=-5
C   NHOPDB=12
C
C READ DATA BASE CONTROL RECORDS
C   CALL RPPDCO (IERR)
C   WRITE (LP,*)
C   WRITE (LP,150) 'RPPPCO',IERR
C   IF (IERR.GT.0) GO TO 130
C
C READ DATA BASE INTEGER AND CHARACTER HASH RECORDS
C   IKEY=0
C   CALL RPDHSH (IKEY,IERR)
C   WRITE (LP,*)
C   WRITE (LP,150) 'RPDHS',IERR
C   IF (IERR.GT.0) GO TO 130
C
C - - - - -
C
C   TYPE='PP24'
C   WRITE (LP,*)

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        WRITE (LP,140) TYPE
C
C GET JULIAN DATE OF FIRST AND LAST DATE OF DATA IN FILE
        DTYPE(NDTYPE)=TYPE
        CALL RPDDTE (DTYPE,JLSTRT,JLSTOP,IERR)
        WRITE (LP,150) 'RPDDTE',IERR
        IF (IERR.GT.0) GO TO 130
        WRITE (LP,*)
        *   ' JLSTRT=',JLSTRT,
        *   ' JLSTOP=',JLSTOP,
        *   ' '
C
C CONVERT FROM JULIAN HOURS TO MONTH, DAY, YEAR AND HOUR
        NHOURL=0
        XTIME='EST'
        CALL MDYH2 (JLSTRT,NHOURL,NBMO,NBDA,NBYR,NBHR,NTZC,IDL,XTIME)
        CALL MDYH2 (JLSTOP,NHOURL,NEMO,NEDA,NEYR,NEHR,NTZC,IDL,XTIME)
        WRITE (LP,160) NBMO,NBDA,NBYR,NBHR,XTIME,NEMO,NEDA,NEYR,NEHR,
        *   XTIME
C
C CHECK IF NO DATA IN DATA BASE
        NHOURL=0
        IF (JLSTRT.EQ.0) THEN
            CALL UDATEI (NMO,NDA,NYR,NHRMIN,NSEC,JULDAT,ISTAT)
            NHR=NHRMIN/100
            CALL JULDA2 (JLSTRT,NHOURL,NMO,NDA,NYR,NHR,NTZC,IDL,XTIME)
            WRITE (LP,'(1X,A,I6)') 'JLSTRT SET TO : ',JLSTRT
            CALL MDYH2 (JLSTRT,NHOURL,NBMO,NBDA,NBYR,NBHR,NTZC,IDL,XTIME)
            WRITE (LP,170) NBMO,NBDA,NBYR,NBHR,XTIME
            JLSTOP=JLSTRT
            NHOURL=12
            ENDIF
C
        JSTRT=JLSTRT
        IF (NHOURL.GE.12) JSTRT=JSTRT+1
        JSTOP=JLSTOP
        IF (NHOURL.GE.12) JSTOP=JSTOP+1
        JHOUR=JSTRT*24+NHOURL
        WRITE (LP,*)
        *   ' JSTRT=',JSTRT,
        *   ' JSTOP=',JSTOP,
        *   ' JHOUR=',JHOUR,
        *   ' '
C
        IENDIN=0
C
        STAID=' '
        WRITE (LP,*) 'ENTER NAME OF ',TYPE,' STATION OR <RETURN>'
        READ (ICD,'(A8)',END=10) STAID
        GO TO 20
10      IENDIN=1
20      IF (STAID.EQ.' ') STAID='SMTSE'
C
C WRITE PP24 VALUE
        IDTYPE=0
        UNITS='IN'
        LDATA=1
        DATA=9.99
        IREV=1
        WRITE (LP,*)
        *   ' JHOUR=',JHOUR,
        *   ' '
        CALL WPD1S (STAID,IDTYPE,NDTYPE,DTYPE,UNITS,JHOUR,JHOUR,
        *   LDATA,DATA,IWRITE,IREV,IERR)
        WRITE (LP,180) 'WPD1S',STAID,IERR,IWRITE
C
C READ DATA FOR FIRST JULIAN DAY FOR ALL STATIONS
        IRETRN=1

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LENDAT=1
WRITE (LP,*)
*   ' JSTRT=', JSTRT,
*   ' '
CALL RPDDLY (DTYPE, JSTRT, IRETRN, LPNTRS, IPNTRS, LPFILL,
*   LIDATA, IDATA, LDFILL, NUMSTA, MSNG, LENDAT, IDATES, IERR)
WRITE (LP,190) 'RPDDLY', IERR, DTYPE
IF (IERR.EQ.0) THEN
  WRITE (LP,*)
  *   ' LPFILL=', LPFILL,
  *   ' LDFILL=', LDFILL,
  *   ' NUMSTA=', NUMSTA,
  *   ' NMSG=', MSNG,
  *   ' '
  IF (LPFILL.GT.0) THEN
    WRITE (LP,200)
    WRITE (LP,210) (IPNTRS(I), I=1, LPFILL)
    ENDIF
  IF (LDFILL.GT.0) THEN
    WRITE (LP,220)
    WRITE (LP,210) (IDATA(I), I=1, LDFILL)
    NSLOT=5
    DO 30 I=1, LDFILL
      JPNTRS=(NSLOT*(I-1))+1
      IF (IPNTRS(JPNTRS).EQ.0) THEN
        WRITE (LP,225) JPNTRS
        GO TO 30
      ENDIF
      IF (IDATA(I).EQ.MSNG) THEN
        WRITE (LP,230) I
        GO TO 30
      ENDIF
      IVAL=IDATA(I)
      IPP24=((IVAL/10)+3000)
      IHOUR=3*((IPP24-3000)*10)+IABS(IVAL)
      PP24=IPP24/100.
      WRITE (LP,240) I, DTYPE, PP24, IHOUR
    CONTINUE
  30   ENDIF
  ENDIF
C
C READ DATA FOR FIRST JULIAN DAY FOR ONE STATION
  WRITE (LP,*)
  *   ' JSTRT=', JSTRT,
  *   ' JSTOP=', JSTOP,
  *   ' '
  CALL RPD1S (STAID, IDTYPE, NDTYPE, DTYPE, JSTRT, JSTOP,
  *   NDTYPR, DTYPR, MYPES, LIDATA, IDATA, LDFILL, IDELT, NVPDT, MSNG,
  *   IERR)
  WRITE (LP,250) 'RPD1S', STAID, IERR, LDFILL
  IF (IERR.EQ.0) THEN
    WRITE (LP,*)
    *   ' LDFILL=', LDFILL,
    *   ' NMSG=', MSNG,
    *   ' '
    IF (LDFILL.GT.0) THEN
      WRITE (LP,220)
      WRITE (LP,210) (IDATA(I), I=1, LDFILL)
      DO 40 I=1, LDFILL
        IF (IDATA(I).EQ.MSNG) THEN
          WRITE (LP,230) I
          GO TO 40
        ENDIF
        IVAL=IDATA(I)
        IPP24=((IVAL/10)+3000)
        IHOUR=3*((IPP24-3000)*10)+IABS(IVAL)
        PP24=IPP24/100.
        WRITE (LP,240) I, DTYPE, PP24, IHOUR
      40
    ENDIF
  ENDIF

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40          CONTINUE
          ENDIF
          ENDIF
C
C - - - - -
C
      TYPE='STG'
      WRITE (LP,*)
      WRITE (LP,140) TYPE
C
      STAID=' '
      IF (IENDIN.EQ.0) THEN
        WRITE (LP,*) 'ENTER NAME OF ',TYPE,' STATION OR <RETURN>'
        READ (ICD,'(A8)',END=50) STAID
        GO TO 60
      ENDIF
50      IENDIN=1
60      IF (STAID.EQ.' ') STAID='FDKSE'
C
C WRITE RRS DATA VALUE
      IDTYPE=0
      RTYPES(NRTYPE)=TYPE
      NVLPOB(NRTYPE)=2
      RUNITS(NRTYPE)='FT'
      NUMOBS(NRTYPE)=1
      CALL UMEMOV (JHOUR,OBS(1),1)
      OBS(2)=999.9
      IFUT=0
      IREV=1
      WRITE (LP,*)
      *   ' JHOUR=',JHOUR,
      *   ' '
      CALL WPDRRS (STAID,IDTYPE,NRTYPE,RTYPES,NVLPOB,RUNITS,NUMOBS,
      *   NOBS,OBS,NMIN,MIN,LWKBUF,WKBUF,IWRITE,IFUT,LSTHR,IREV,IERR)
      WRITE (LP,180) 'WPDRRS',STAID,IERR,IWRITE
C
C READ DATA FOR FIRST JULIAN DAY FOR ONE STATION
      WRITE (LP,*)
      *   ' JHOUR=',JHOUR,
      *   ' '
      CALL RPDRRS (STAID,IDTYPE,RTYPES(1),NVLPOB(1),JHOUR,JHOUR,
      *   NOBS,OBS,NUMOBS,NMIN,MIN,LWKBUF,WKBUF,LSTHR,IERR)
      WRITE (LP,270) 'RPDRRS',STAID,IERR,LSTHR
      IF (IERR.EQ.0) THEN
        CALL UMEMOV (OBS(1),JHOUR,1)
        WRITE (LP,'(A,I6,A,F10.2,A,I6,A)')
        *   ' JHOUR=',JHOUR,
        *   ' OBS(2)=' ,OBS(2),
        *   ' LSTHR=',LSTHR,
        *   ' '
      ENDIF
C
C - - - - -
C
C UPDATE DATA BASE CONTROL RECORDS
130  CALL WPPDCO (IERR)
      WRITE (LP,150) 'WPPDCO',IERR
C
C CLOSE FILES
      CALL UCLOSL
C
      WRITE (LP,300)
      STOP
C
C - - - - -
C
140  FORMAT (' TYPE=',A)
150  FORMAT (' ',A,' CALLED : IERR=',I2)

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160  FORMAT (' ',
*      'DATE OF FIRST DATA VALUE = ',
*      I2.2, '/', I2.2, '/', I4.4, '-', I2.2, A,
*      3X,
*      'DATE OF LAST DATA VALUE = ',
*      I2.2, '/', I2.2, '/', I4.4, '-', I2.2, A,
*      3X)
170  FORMAT (' ',
*      'DATE OF FIRST DATA VALUE = ',
*      I2.2, '/', I2.2, '/', I4.4, '-', I2.2, A,
*      3X)
180  FORMAT (' ', A, ' CALLED : STAID=', A, 3X, 'IERR=', I2, 3X,
*      'IWRITE=', I3)
190  FORMAT (' ', A, ' CALLED : IERR=', I2, 3X, 'TYPE=', A)
200  FORMAT (' IPNTRS ARRAY:')
210  FORMAT (10(1X, I6, 1X))
220  FORMAT (' IDATA ARRAY:')
225  FORMAT (' IPNTRS ARRAY POSITION ', I4, ' IS MARKED DELETED')
230  FORMAT (' IDATA ARRAY POSITION ', I4, ' IS SET TO MISSING')
240  FORMAT (' IDATA ARRAY POSITION ', I4, ' : ', A, '=', F5.2, 3X,
*      'IHOURL=', I2)
250  FORMAT (' ', A, ' CALLED : STAID=', A, 3X, 'IERR=', I2, 3X,
*      'LDFILL=', I5)
260  FORMAT (' IDATA ARRAY POSITION ', I4, ' : ', A, '=', F5.2, 3X,
*      'IHOURL=', I2, 3X, 'XLAT=', F7.2, 3X, 'XLON=', F7.2)
270  FORMAT (' ', A, ' CALLED : STAID=', A, 3X, 'IERR=', I2, 3X,
*      'LSTHR=', I6)
280  FORMAT (' ', A, ' CALLED : IERR=', I2, 3X, 'TYPE=', A, 3X,
*      'MAXPST=', I5)
290  FORMAT (' ', A, ' CALLED : IERR=', I2, 3X, 'TYPE=', A, 3X,
*      'MAXGRD=', I5)
300  FORMAT ('0- PROCESSING COMPLETED -')
C
END

```