

West Virginia Field Office  
Post Office Box 1278  
Elkins, West Virginia 26241

June 30, 1995

Colonel Richard W. Jemiola  
District Engineer  
U.S. Army Corps of Engineers  
502 Eighth Street  
Huntington, West Virginia 25701

Dear Colonel Jemiola:

This responds to your letter dated June 30, 1994 requesting formal consultation pursuant to Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq) (ESA).

This constitutes the U.S. Fish and Wildlife Service's (Service) biological opinion (BO) on the U.S. Army Corps of Engineers, Huntington District's (COE) Section 404 permit application review submitted by the Wolfpen Knob Development Company (Wolfpen). Wolfpen proposes to develop a new below-drainage underground mining complex, with surface support facilities, including a coal preparation plant, coal handling equipment, and a coal refuse disposal area. The project is located on Laurel Fork of Tate Creek and Tate Creek. Tate Creek flows into the Elk River near river mile (RM) 76.8 in Braxton County, West Virginia.

The COE has determined that the proposed action may affect three endangered freshwater mussels: the pink mucket pearly mussel, Lampsilis abrupta; the northern riffleshell, Epioblasma torulosa rangiana; and the clubshell, Pleurobema clava. The Service is concerned with the direct and indirect cumulative impacts associated with coal mining such as increased suspended solids and siltation, acid mine drainage (AMD), and metal contamination on endangered mussels in the Elk River watershed. A complete administrative record of this consultation is on file in the West Virginia Field Office.

#### Background

Informal consultation between the Service and the COE relative to the project began by letter dated November 2, 1992, when the Service informed the COE of the presence of the endangered L.

abrupta, the proposed as endangered P. clava, and the possible presence of the proposed as endangered E. t. rangiana in the Elk River downstream of the project. The November 2, 1992 letter requested that the COE prepare a biological assessment (BA) in accordance with Section 7(a)(2) of the ESA. Since that time, the clubshell and the northern riffleshell mussels were listed as endangered species as published in the Federal Register, Vol. 58, No. 5642, January 22, 1993. On June 30, 1994 the COE requested formal consultation with the Service and submitted the BA.

On October 3, 1994 the COE re-advertised the dredge and fill portion of the project by Public Notice ORHOR-F No. 94-61. The WVDEP by letter dated November 29, 1994 requested an additional 90 days to resolve water quality issues. The Service and the U.S. Environmental Protection Agency by letters dated November 3 and 28, 1994, respectively, recommended that a permit for the project be denied pending preparation and review of an Environmental Impact Statement (EIS). The EIS should address the direct and indirect cumulative impacts of the potential coal mining and the associated transportation system in the Elk River watershed. An EIS for the project was never prepared; however, Wolfpen responded to the COE regarding our November 3, 1994 comments on November 22, 1994. Wolfpen's November 22, 1994 comments were not transmitted to the Service until March 9, 1995.

After an in depth review of the BA, the Service requested on February 10, 1995 additional information and clarification of existing information to obtain the best scientific data available for our preparation of the BO. By transmittal letter dated April 12, 1995 Wolfpen responded to the Service's February 10, 1995 additional information request. The Service also participated in interagency meetings with Wolfpen on April 8 and May 11, 1995 to further discuss our concerns.

## **BIOLOGICAL OPINION**

### **Proposed Project**

The mining complex will include a room and pillar mine, preparation plant, coal refuse disposal area, and associated surface facilities. The mine would utilize a large coal preparation plant that would generate clean coal for market and a waste stream of coal refuse. Tate Creek, a tributary to the Elk River, flows through the portion of the project area which includes the preparation plant and the mine's surface facilities. Approximately 5,240 cubic yards of fill would be placed below the

ordinary high water elevation into 3,200 feet of Tate Creek in association with a stream relocation. The length of the new channel would be 3,326 feet. Culverted fills would be placed into three unnamed tributaries of Tate Creek to provide for construction of surface facilities and the coal preparation plant. The total length of the three culverts would be 2,593 feet.

The coal refuse disposal area would be built in Laurel Fork, a tributary of Tate Creek. Wolfpen proposes to build a starter dam composed of compacted earthen materials. Coarse refuse material will be highly compacted after placement on the starter dam. Fine coal refuse from the preparation plant will be pumped behind the embankment. The proposed stream of Laurel Fork would require placement of 567 cubic yards of fill below the ordinary high water mark into 1,000 feet of the stream. The length of the new channel would be 1,131 feet. A culverted fill would also be placed into an unnamed tributary of Laurel Fork. The length of the culvert would be 2,212 feet. Additional fill into Laurel Fork would be associated with the sediment dam and the coal slurry impoundment.

The erosion and sediment pond controlling runoff from Laurel Fork is designed to hold the 7 year 24 hour storm event. Other ponds controlling runoff at the mine and plant sites are designed to hold the 10 year, 24 hour storm event.

#### Review of Endangered Species Information

Neither E. t. rangiana or L. abrupta are found upstream or in the immediate downstream vicinity of the project. The nearest downstream sites for E. t. rangiana and L. abrupta are approximately 48.0 and 42.0 miles, respectively. Because of the great distance downstream to these populations and the pollution control measures proposed by Wolfpen, the Service believes that these species will not be adversely affected by the project and will not be given further consideration. Therefore, only possible impacts to P. clava will be further analyzed in this BO.

#### Clubshell mussel, Pleurobema clava

##### Distribution

The historic range of P. clava included Illinois, Indiana, Kentucky, Tennessee, Alabama, Michigan, Ohio, Pennsylvania, and West Virginia. It was widespread in the Ohio River basin in rivers such as the Ohio, Allegheny, Scioto, Kanawha, Little Kanawha, Licking, Kentucky, Wabash, White, Vermillion, Mississinewa, Tippecanoe, Tennessee, Green, and Salt Rivers. P.

clava was also located in the Maumee River basin and tributaries of western Lake Erie such as the Huron River and the River Raison (Stansbery et al. 1982).

P. clava presently occurs in 13 streams. It is found in the Green River, Edmonson and Hart Counties, Kentucky. In Pennsylvania, it occurs in French Creek, Crawford, Venango, and Mercer Counties; LeBoeuf Creek, Erie County; Conneautee Creek of French Creek, Crawford County; and the Allegheny River, Warren and Forest Counties. In Ohio, it occurs in the St. Josephs River, West Branch of the St. Josephs River, Williams County; the Walhonding River, Coshocton County; and Little Darby Creek, Madison County. In West Virginia, it occurs in the Elk River, Kanawha County and Hackers Creek of the West Fork River, Lewis County. It occurs in the Tippecanoe River, Kosciusko, Fulton, Pulaskia, and Tippecanoe Counties, Indiana and in Michigan it occurs in the East Fork of the West Branch of the St. Josephs River, Hillsdale County.

#### Ecology and Life History

P. clava inhabits clean swept sand and gravel in medium to small rivers and streams (Stansbery et al. 1982). Thomas Watters (Ecological Specialists Inc., pers. comm., 1991) has found the clubshell to bury in clean loose sand to a depth of two to four inches.

Many aspects of the life history of this rare mussel are not known. Like other freshwater mussels, they feed and respire by filtering macroscopic food particles and oxygen from the water column.

In the reproductive cycle males produce sperm which is discharged into the water column and dispersed by currents. Downstream females intake the sperm during feeding and respiration. Fertilization occurs within the gills which are modified as brood pouches. P. clava is a short term breeder (tachytictic) i.e., fertilization takes place in mid-spring and the embryos (glochidia) are discharged into the water column in mid-summer (Ortman 1919).

This complicated reproductive cycle includes one or more species of fish. Where the glochidium attaches to the gills, fins, or skin of the fish and is nourished for a short time before developing into a juvenile mussel. This relationship is generally species-specific and sometimes highly specialized. For example, the genus Lampsilis has evolved a mantle flap on the incurrent syphon which resembles a small fish or aquatic invertebrate, complete with eye spot. When extended into the current, this flap

attracts fish, increasing the opportunity for glochidia to come in contact with the host fish.

The following are possible fish hosts which are known to occur in the Elk River. Host fish for a species closely related to P. clava include the central stoneroller, Campostoma anomalum; common shiner, Luxilus cornutus; river chub, Nocomis micropogon; and fantail darter, Etheostoma flabellare (Neves 1983, Weaver et al. 1991).

### Reasons for Decline and Continued Threats

Since mussels are sedentary, they are extremely susceptible to environmental degradation. The range reductions of these mussels are attributed to physical loss of habitat and degraded water quality related primarily to water impoundments, channelization, streambank clearing, and agriculture. Impacts associated with run-off from human waste, chemical outfalls, and coal mining have also affected many tributaries.

The greatest diversity and abundance of mussels are associated with clean-swept sand and gravel substrates. Chronic increases in turbidity and suspended sediments decrease the depth and amount of light penetration, affect primary productivity, decrease oxygen levels, increase water temperature, irritate or cause clogging of gills, and result in a blanket of silt on the substrate. Siltation affects mussels by smothering eggs or larvae of the fish host populations and by reducing food availability. Siltation also fills interstitial spaces eliminating spawning and habitat critical to the survival of young fish. Mussels may be directly effected by siltation through smothering.

Pollution from municipal, agricultural, and industrial waste discharges have decreased or eliminated mussel populations directly and indirectly through elimination of significant species of fish hosts resulting in reproductive failures (U.S. Fish and Wildlife Service 1994).

The exotic, prolific zebra mussel, Dreissena polymorpha, accidentally introduced to North America in the mid-1980's, poses a severe threat to all native mussel fauna through the competition for space, food, and survival of glochidia. Presently, the zebra mussel, which was conveyed to the area through ship ballast water from interior European ports, is abundant in the lower Great Lakes and is increasing in other portions of the range of this federally listed species.

## Environmental Baseline in the Action Area

### Status of the species

P. clava occurs in the Elk River upstream and downstream of the confluence of Tate Creek. Prior to 1995, the nearest known population to the confluence of Tate Creek, represented by one living specimen, was approximately 3.2 miles downstream at the confluence of O'Brion Creek. In our February 10, 1995 information request, the Service recommended that a mussel survey be conducted in the Elk River between the confluences of Tate Creek and O'Brion Creek. Our request was based on the fact that Wolfpen was not accepting the fact that P. clava could occupy unsurveyed suitable habitat beginning immediately below the confluence of Tate Creek. On June 20, 1995, the Service discovered the presence of P. clava approximately 100 feet below the confluence of Tate Creek. The mussel survey revealed good numbers of 10 species including one living P. clava. The specimen was between 10 and 15 years old and appeared healthy. The West Virginia Division of Natural Resources surveyed this location in 1991 and reported 11 living species, excluding P. clava.

### Effects of the action

The effects of construction and coal mine related effluent on freshwater mussels were reviewed in the BA and Wolfpen's letter dated April 7, 1995, and generally described in the "Reasons for decline and threats" section of this biological opinion. The Service remains concerned with the possible indirect chronic impacts of sedimentation, acid mine drainage, and heavy metals pollution on fish and the macroinvertebrate community including the endangered P. clava.

Based on the best scientific information available, the project during construction and normal operation and during most routine precipitation events will not discharge runoff from their operation to Tate Creek or the Elk River. However, during and after the life of the project indirect impacts associated with unusual construction and operating circumstances and weather conditions, such as localized heavy downpours, could result in pollutants entering the Elk River during a normal low flow period and impacting the aquatic community including P. clava. For example, Braxton County received three inches of rain in two hours on June 20, 1995. According to Ms. Kathy Vreeland (personnel communications, 1995) of the Northeast Region Climate Center at Cornell University, Ithaca, New York, that storm amounted to

somewhere between a 50 and 100 year event. Locally heavy isolated thunderstorms are the rule in the mountains of West Virginia not the exception. Since the ponds controlling runoff have a maximum design capacity of a 10 year, 24 hour storm event, the event on June 20, 1995 would have likely resulted in a discharge from most if not all of the sediment ponds into the Elk River which at the time was low and clear. Periodic events of this nature during and after the life of the project could adversely effect the aquatic communities of the Elk River including P. clava.

The Service is also concerned that upon completion of mining, metal contaminated ground water from the mine will reach the Elk River and pose a threat to P. clava. Approximately 50% of Elk River flow is contributed by groundwater.

### Conclusion

It is, therefore, the Service's biological opinion that the action as proposed could adversely impact P. clava, but the action is not likely to jeopardize the continued existence of the species.

### INCIDENTAL TAKE

Sections 4(d) and 9 of ESA, as amended, prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or the applicant. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

### Level of take

Accurate quantification of anticipated take is difficult to predict. P. clava represents a very small portion of the mussel community and the macroinvertebrate community as a whole. It would not be practical to only monitor P. clava or even the mussel community alone due to its scattered, small population distribution which would require large sample sizes possibly resulting in increased take due to habitat modification. It is reasonable to assume that the status of the entire macroinvertebrate community reflects the well being of P. clava.

Therefore, the level of incidental take anticipated is defined as a decline of not greater than 25% of the reference score of the macroinvertebrate community structure in the downstream sampling station (¼ - ½ mile of the confluence of Tate Creek) compared to the upstream sampling station based on the rapid bioassessment protocol III (Plafkin et. al., 1989) (enclosed).

#### Reasonable and Prudent Measures

The measures described below are non-discretionary, and must be implemented by the agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7 (o) (2) to apply. The COE has a continuing duty to regulate the activity covered by this incidental take statement. Those measures, terms, and conditions within the authority of the COE must be incorporated as enforceable terms in the permit or grant document. Further, the agency should retain oversight to ensure compliance with these terms and conditions.

The Service believes that there are no reasonable and prudent measures that could be implemented by the COE or the applicant which would minimize take of P. clava.

#### Terms and Conditions

The COE must comply with the following terms and conditions. These terms and conditions are non-discretionary.

Implement the following annual biological monitoring plan above and below the confluence of Tate Creek in the Elk River to detect any changes in the criteria described in the "Level of Take" section. Changes in community structure will be noted and compared to the "Level of Take" criteria previously discussed. Should any of the "Take" criteria be met, it will trigger a reevaluation of the project impacts on P. clava and possible reinitiation of consultations.

Monitoring should continue throughout the life of the project or, until it is determined, after consultation with the Service, that such monitoring is no longer necessary.

#### **ANNUAL BIOLOGICAL MONITORING PLAN**

1. A benthic survey shall be required using collection methods and data analysis in accordance with rapid bioassessment protocol III (Plafkin et. al., 1989).
  - a. For benthic sub-sampling a minimum of 200 organisms shall be required.
2. Habitat assessment and physio-chemical parameters shall be conducted at each benthic collection site. Methods for habitat assessment shall be conducted in accordance with Chapter 5 of the Rapid Bioassessment Protocols (Plafkin et. al., 1989).
  - a. Water quality parameters shall include those listed in Section 5.1.2 of Plafkin et. al., 1989, and total iron, total aluminum, total acidity, total alkalinity, and sulfate.
3. Survey stations shall be selected by the Service, WVDEP, and WVDNR in consultation with the Wolfpen Knob Development Company.
4. Sampling shall be completed annually during August or September.

However, if the COE determines that the monitoring period required by the Terms and Conditions exceed the COE permit authority, the COE should: 1) provide the applicant with a copy of this BO; and 2) notify him/her that the Terms and Conditions must be adopted by the applicant in order for the applicant to be exempt from the provisions of Section 9, should incidental take occur.

Finally, the applicant should be notified that if he/she declines to implement the Terms and Conditions, any incidental taking that results from the activities considered in the BO is prohibited by Section 9; and, therefore, he/she should contact this office to apply for an exemption under Section 10(a)(1)(B).

This concludes the need for further action on this project as required under Section 7 of the ESA. Should this project be

modified or new information becomes available, consultation should be reinitiated.

Should any of the "Level of Take" criteria be reached in the Elk River, further Section 7 consultation will be required. Such action may include implementation of additional measures to minimize harm to the species and/or reinitiation of formal consultation.

If you have any questions, please contact me at this office (phone 304-636-6586).

Sincerely,

William A. Tolin  
Acting Supervisor

cc:

WVDNR - Dowler  
WVDEP - Scott  
WVDEP - Pelurie  
WVDEP - Parsons  
WVDEP - Politan  
OSM - Sheets  
USEPA - Sweeney  
WV Rivers Coalition - Harrison  
CAG - Steenstra  
TWS - Butterworth  
Mountaineer Audubon Society - Stebbins  
Mountain Stream Monitors - Rank  
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