

(2) The results of the testing required by § 195.513 indicating the person has demonstrated successful performance; and

(3) The refresher training required by § 195.515 which the person has received.

(b) Each operator shall sign and date the following certification, and include it among the records for each qualified person. "I certify that on this date [insert name of person] is [qualified or qualified administratively] to perform the specified covered function(s) by the training and testing required under 49 CFR Part 195, Subpart G, as demonstrated by the accompanying record(s) prepared for that person in accordance with § 195.519."

(c) The records shall be retained for at least 3 years after a person ceases to be employed by the operator in a capacity that requires qualification under this subpart.

§ 195.521 Compliance dates.

Operators shall meet the following compliance dates:

(a) Completion of the qualification training and testing schedule required by § 195.509(b) before [6 months after date of publication of final rule];

(b) Completion of the qualification training and testing required by §§ 195.511 and 195.513 and recordkeeping required by § 195.519 before [24 months after date of publication of final rule];

(c) Completion of the initial refresher training schedule required by § 195.509(c) before [30 months after publication of final rule]. Thereafter, the refresher training schedule shall be updated as necessary for implementation of the requirements for refresher training under § 195.515.

(d) Completion of the initial refresher training required by § 195.515 before [36 months after date of publication of final rule].

(e) Completion of the initial competency reviews, if any are required under § 195.517 before [12 months after date of publication of final rule].

Issued in Washington, DC on July 27, 1994.
George W. Tenley, Jr.,

Associate Administrator for Pipeline Safety.
[FR Doc. 94-18864 Filed 8-2-94; 8:45 am]

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Federal Highway Administration

49 CFR Part 393

[FHWA Docket No. MC-94-9]

RIN 2125-AD37

Parts and Accessories Necessary For Safe Operation; Automatic Brake Adjusters and Brake Adjustment Indicators

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FHWA is proposing to require the use of automatic brake adjusters (ABAs) on hydraulically-braked commercial motor vehicles (CMVs) and air-braked CMVs manufactured on or after October 20, 1993, and October 20, 1994, respectively. The FHWA is also proposing a requirement for brake adjustment indicators on air-braked CMVs with external adjustment mechanisms manufactured on or after October 20, 1994. This rulemaking is intended to: Insure that the operational standards for brakes in the Federal Motor Carrier Safety Regulations (FMCSRs) are consistent with the manufacturing standards in the Federal Motor Vehicle Safety Standards (FMVSSs) numbers 105 and 121, which now require the installation of automatic brake adjusters and adjustment indicators on certain CMVs manufactured on or after these dates; and improve the safety of operation of CMVs by reducing the incidence of brakes that are out of adjustment.

In addition, the FHWA requests information concerning the possibility of requiring these devices to be retrofitted to CMVs placed in operation prior to the effective dates of the recent amendments to FMVSS Nos. 105 and 121.

DATES: Comments must be received on or before October 3, 1994.

ADDRESSES: Submit written, signed comments to FHWA Docket No. MC-94-9, room 4232, HCC-10, Office of the Chief Counsel, Federal Highway Administration, 400 Seventh Street, SW., Washington, D.C. 20590. All answers to questions should refer to the appropriate question number and all comments on specific provisions should refer to the appropriate section and paragraph number. All comments received will be available for examination at the above address from 8:30 a.m. to 3:30 p.m., e.t., Monday through Friday, except Federal holidays. Those desiring notification of receipt of

comments must include a self-addressed, stamped postcard.

FOR FURTHER INFORMATION CONTACT: Ms. Deborah M. Freund, Office of Motor Carrier Standards, (202) 366-2981, or Mr. Charles Medalen, Office of the Chief Counsel, (202) 366-1354, Federal Highway Administration, Department of Transportation, 400 Seventh Street, SW., Washington, D.C. 20590. Office hours are from 7:45 a.m. to 4:15 p.m., e.t., Monday through Friday, except Federal holidays.

SUPPLEMENTARY INFORMATION:

Background

A. General Information

Proper brake adjustment is critical to the safe operation of commercial motor vehicles. When brakes are correctly adjusted, vehicles can generally be brought to a stop within a satisfactory distance and in a controlled manner. However, brakes that are not properly adjusted cannot develop the retardation force designed into the vehicle's brake system, resulting in increased stopping distances. Under emergency conditions, this can result in a collision that might otherwise have been avoided, or in a more severe collision than would have occurred with properly-adjusted brakes.

Out-of-adjustment brakes are the primary equipment-related cause for commercial motor vehicles to be placed out of service during roadside inspections. According to the FHWA's Office of Motor Carrier Field Operations Annual Report for Fiscal Year 1992, 36.2 percent of vehicles placed out-of-service are cited for this deficiency. A copy of this report has been placed in the docket.

In addition, brake-related accidents, some stemming from gross brake maladjustment, are also a factor in some "equipment malfunction" CMV accident citations. The National Highway Traffic Safety Administration's (NHTSA) regulatory evaluation, prepared in conjunction with their rulemaking on automatic brake adjusters (ABAs), noted that 6.8 percent of all medium and heavy truck accidents were reported as being caused by defective equipment. Of that figure, 31 percent were due to defective brakes, with 60 percent of those brakes judged to be out of adjustment; this amounts to 1.3 percent of accidents reported—or nearly 4,000 accidents per year. The regulatory evaluation also cited a review of National Transportation Safety Board (NTSB) reports on 97 serious heavy truck accidents investigated from 1969 to 1981. Out-of-adjustment brakes were cited as a causal or contributing factor in 27 of those 97 accidents, or 28

percent. A copy of the NHTSA's regulatory evaluation has been placed in the docket.

B. Safety and Operational Role of Automatic Brake Adjusters and Brake Adjustment Indicators

Automatic brake adjusters significantly reduce the effort required for inspection and manual adjustment of the brakes. Clearance-sensing ABAs limit the clearance between brake linings and drums, or pads and rotors, to a level that ensures effective brake actuator strokes. They adjust on every complete brake application. Stroke-sensing ABAs adjust on brake applications severe enough to cause the brake actuator stroke to exceed that which the ABA is designed to maintain. ABAs include, but are not necessarily limited to, automatic slack adjusters (ASAs). The term "automatic brake adjusters" is used to provide a performance-based description of this class of devices.

Brake adjustment indicators (BAIs), especially when used in concert with ABAs, can do a great deal to address the brake adjustment problem. A BAI conforming to the NHTSA requirements can significantly reduce the time necessary to assess brake adjustment levels. Use of these indicators will make it easier for drivers and maintenance personnel to make brake-adjustment checks at more frequent intervals, and detect brake adjustment problems before they become severe enough to cause, or worsen the outcome of, an accident.

C. NHTSA and NTSB Research on CMV Brake Performance and ABAs

Two extensive research studies of CMV brake performance, and operational and maintenance experiences of motor carrier fleets utilizing CMVs equipped with ABAs, have been performed by the NHTSA and the NTSB. We summarize both here. Copies of the NHTSA and the NTSB studies are available from the National Technical Information Service (NTIS, Springfield, Virginia, telephone (800) 553-6847). Copies have also been placed in the public docket.

1. NHTSA Research. The NHTSA research was reported in "Automatic Brake Adjusters for Heavy Vehicle Air Brake Systems," February 1991, report DOT-HS-807-724 (PB 91-215814). Seven fleets participated during a 2.5-year initial study period and an additional 3 years of follow-up; 245 tractors and 289 trailers accumulated nearly 50 million miles of travel during this time.

Researchers and fleet maintenance staffs made nearly 20,000 measurements

of brake stroke length on approximately 1,800 brake adjusters (four different manufacturers' ABAs, plus manual brake adjusters (MBAs)). For 36 types of ABA installations, the median out-of-adjustment rate was 4.0 percent, and the median number of out-of-adjustment observations per brake per 10,000 miles was 0.016. The NHTSA noted that "[t]he ASAs tested were principally models designed and marketed in the early to mid 1980's. There have been extensive design improvements in both ASAs and other brake system components since that time. Thus, the performance data presented here for these earlier ASA designs likely understate the performance levels that can be expected from ASAs purchased today."

The NHTSA collected a limited amount of control data on MBAs. There were 96 MBAs used in portions of 3 of the fleets. The use of MBAs generally resulted in higher percentages and rates of out-of-adjustment brakes than did the use of ABAs, and the differences were considered to be statistically significant.

2. NTSB Research. The NTSB, an independent Federal agency responsible for investigating and determining the probable cause or causes of certain transportation-related accidents, has studied numerous accidents in which brake deficiencies have been cited as causal factors.

A recent NTSB study, "Heavy Vehicle Airbrake Performance," adopted April 29, 1992, report NTSB/SS-92/01 (PB 92-917003), analyzed information gathered over a 17-month period from selected brake-related accidents involving heavy trucks and buses, as well as data collected by NTSB staff during roadside inspections in 5 States. The report's findings highlighted the role of brake system components in certain vehicle instability accidents, and pointed out that many brake out-of-adjustment problems were due both to the small tolerance range and to a lack of proper brake maintenance. The NTSB recommended that the DOT, among other things: (1) Require air-braked vehicles to be equipped with visible adjustment indicators that will allow one person to check the level of adjustment (Recommendation H-92-50); (2) require automatic adjusters on vehicles equipped with airbrake systems (Recommendation H-92-51); and (3) encourage the installation of visible brake adjustment indicators on all vehicles equipped with air brake systems for easy detection of adjustment levels (Recommendation H-92-57).

D. NHTSA Requirement for ABAs and Automatic Adjustment Indicators

The FHWA strives to maintain consistency between the manufacturing standards for commercial motor vehicles contained in the NHTSA's Federal Motor Vehicle Safety Standards (FMVSSs), and the operations and maintenance regulations contained in the FMCSRs. On October 20, 1992 (57 FR 47793), the NHTSA issued a final rule amending FMVSS No. 105, *Hydraulic Brake Systems*, to require ABAs on motor vehicles equipped with hydraulic brake systems. The NHTSA also amended FMVSS No. 121, *Air Brake Systems*, to require ABAs on all air-braked motor vehicles and adjustment indicators on air-braked vehicles with external adjustment mechanisms. The effective dates are October 20, 1993, for the amendments to FMVSS No. 105 and October 20, 1994, for the amendments to FMVSS No. 121.

While the NHTSA rulemaking requires manufacturers to equip new vehicles with ABAs in order to ensure brakes are in proper adjustment, it does not affect the readjustment limits used by the States in roadside inspections nor those required by the FHWA for periodic inspections (contained in Appendix G to the FMCSRs, "Minimum Periodic Inspection Standards"). The reach of the NHTSA's regulatory authority extends only to vehicle manufacturers. The FMCSRs apply to employers, employees, and commercial motor vehicles which transport property or passengers in interstate commerce.

E. Brake Adjustment Criteria

The North American Uniform Driver-Vehicle Inspection Procedure (NAUDVIP) provides a standardized procedure used by States and local governments to inspect in-service CMVs. The NAUDVIP was developed by the Commercial Vehicle Safety Alliance (CVSA). The Commercial Vehicle Safety Alliance is an association of Federal, State, and Provincial officials responsible for the administration and enforcement of motor carrier safety laws in the United States, Canada, and Mexico, who work together to enhance commercial motor vehicle safety.

As a part of the NAUDVIP, the CVSA specifies certain limits for pushrod travel. These limits, which are identical to the limits contained in Appendix G to the FMCSRs, "Minimum Periodic Inspection Standards," have been set in consultation with motor carrier safety enforcement officials and brake manufacturers. Brakes at or beyond these limits are considered to be out of adjustment.

The origin of the CVSA out-of-adjustment criteria can be traced back to the California Highway Patrol (CHP) inspection criteria established in the 1960's. The CHP readjustment limits were based on brake adjustment limits developed by the former Motor Vehicle Manufacturers Association (now the American Automobile Manufacturers Association, which no longer deals with heavy truck issues). These limits are approximately 80 percent of full brake chamber stroke. This is generally the point on the force versus stroke curve for a typical brake chamber where the brake force starts decreasing rapidly with increasing stroke.

CVSA criteria regarding brake adjustment limits specify that a vehicle is to be placed out of service if 20 percent or more of its brakes are defective. A brake is considered defective if its adjustment is $1/4$ inch (6.5 mm) or more beyond the readjustment limit. Two brakes at the readjustment limit or less than $1/4$ inch beyond the readjustment limit are also considered one defective brake. For example, on a 5-axle combination vehicle with 10 brakes, 4 brakes at the readjustment limit would be considered as 2 defective brakes, and would also result in an out-of-service condition.

Since the readjustment limits are based upon the characteristics of the brake chamber, the use of ABAs would not affect the brake chamber output force. Therefore, the FHWA believes that the current readjustment limits are appropriate for CMVs equipped with ABAs, as well as those currently equipped with MBAs. When properly installed and maintained, ABAs can thus help prevent sudden and unexpected loss of braking ability due to a loss of brake force resulting from excessive pushrod stroke.

F. ABA Installation and Reliability

As noted in the NHTSA's final rule, ABAs are currently being installed on a large percentage of newly-manufactured medium- and heavy-duty air-braked vehicles. Some fleets have been specifying ABAs for their vehicles for a number of years. However, NHTSA also noted that one major manufacturer and several smaller ones did not provide ABAs as standard equipment, and many purchasers did not order them as optional equipment. In addition, the majority of CMVs currently in operation are not equipped with ABAs.

Brake adjuster lifespan generally depends upon the number of brake applications and the number of brake service cycles of the CMV. The NHTSA fleet study noted that most ABAs observed performed for the duration of

the study without mechanical failure. The researchers did observe some mechanical failures, and some apparent failures that were actually due to other problems in the brake system, such as wear in the foundation brakes. A number of the failures were caused by wear to specific parts. The manufacturers reported that they have implemented design changes to remedy those problems. The NHTSA's supplemental fleet data collected in 1988-1990 on newer ABAs indicated high levels of reliability. The reported average replacement rates for ABAs were 0.06 replacements per million tractor miles and 0.3 per million trailer miles.

The NHTSA research report emphasized that ABAs must be installed in accordance with manufacturer specifications to maintain efficient adjustments. In most cases, no special adjustments in brake component geometry are required. Manufacturers of these devices provide drawings, templates, and similar aids to facilitate installation.

The figures for CMVs placed out of service appear to indicate that there are considerable difficulties in monitoring brake adjustment status. The findings of the NHTSA research demonstrate that BAIs, especially when used in concert with ABAs, can make a significant contribution to resolving the brake adjustment problem. Aside from the clear safety benefits of maintaining proper brake adjustment, ABAs can have a positive benefit on motor carrier productivity by preventing CMVs from being placed out of service, reducing roadside service calls and the resulting delays to transportation operations.

A BAI conforming to the NHTSA requirements (49 CFR 571.121) can significantly reduce the time needed to assess brake adjustment status. As their name implies, BAIs provide a visible indication of pushrod stroke. There are several varieties: some BAIs consist of color-coded or scribed marks on the pushrod, others raise a plastic or metal "flag" when the pushrod stroke reaches the prescribed adjustment limit.

ABAs do not eliminate the need for periodic inspection and maintenance of the brake system, but they do reduce the need for brake adjustment. Recommended Practice RP-609 of The Maintenance Council of the American Trucking Associations states that "[a]n automatic slack adjuster should not have to be manually adjusted except for initial installation and at brake reline * * *." If adjustment is needed, it could be a sign that the ABA is not working or that there is a problem with the [foundation] brake system. Brake

actuator strokes must still be monitored, of course.

Like their manual counterparts, ABAs and BAIs require regular maintenance. They operate in the same hostile and exposed environment as manual systems. The NHTSA notes that their performance is affected by failures and wear in other parts of the foundation brake system, and, like other components, their life expectancy can be less than that of the tractor or trailer on which they are installed.

Discussion of Proposal

The FHWA believes that the information presented in the reports cited above indicates that both motor carriers and the travelling public may derive substantial operational and safety benefits from the use of automatic brake adjusters and brake adjustment indicators.

The FHWA proposes to amend the FMCSRs by adding a new § 393.53, Automatic Brake Adjusters and Brake Adjustment Indicators. This section would be added to Subpart C, Brakes.

The provisions of paragraphs (a), (b), and (c) would require that automatic brake adjusters and brake adjustment indicators installed on newly manufactured CMVs to comply with the requirements of FMVSS 105 and 121 be maintained by the motor carriers operating those CMVs.

Questions

The FHWA believes there are also opportunities for improvements to operational safety of CMVs manufactured prior to the effective dates of the recent amendments to FMVSS 105 and 121. The FHWA therefore requests information regarding the potential impacts of requiring CMVs subject to the FMCSRs to be retrofitted with ABAs, and for requiring air-braked CMVs with external adjustment mechanisms to be retrofitted with brake adjustment indicators. The FHWA specifically requests comments on the following questions:

1. Should air-braked CMVs manufactured before the effective date of NHTSA's rule be required to be retrofitted with ABAs?
2. Should all air-braked CMVs with external brake adjustment mechanisms be required to be retrofitted with brake adjustment indicators?
3. If certain CMVs are to be retrofitted, how much time should be allowed for installation of the new equipment?
4. Are there certain types or configurations of air-braked vehicles that cannot be equipped with ABAs because of space limitations around the axles and wheels?

5. Should different periods be specified for retrofitting single-unit trucks, tractors, converter dollies, and trailers?

6. The requirements proposed by this NPRM would exclude air-braked vehicles that were not subject to FMVSS No. 121 on the date of manufacture. (Vehicles not subject to the requirements are listed under Paragraph S3 of § 571.121, and include certain types of limited- or specialized-use vehicles such as wide trailers, vehicles equipped with an axle with a gross axle weight rating of 29,000 pounds or more, any truck or bus that has a speed attainable in 2 miles of not more than 33 mph, heavy hauler trailer sets, and load divider dollies.) Should specific types of CMVs, or CMVs used in unique operations, (i.e., CMVs that are not subject to the requirements of FMVSS 121, but are subject to the FMCSRs) be exempt from a requirement to be retrofitted with ABAs? Should these specific types of air-braked CMVs manufactured on or after October 20, 1994, be required to be equipped with ABAs prior to being placed in operation in interstate commerce? Please provide details.

7. What are the costs associated with retrofitting an ABA compared to replacement of an MBA? Please include the cost of the device, the time required to complete the installation, and a representative hourly salary of the mechanic performing the installation. Please also include a "loss of use" cost figure if a CMV were to be taken out of revenue service for retrofitting at some time other than a time when a brake adjuster would normally be due for replacement. How often do tractors and trailers visit a facility where retrofitting could take place?

8. Should the FHWA consider a retrofitting requirement for hydraulically-braked CMVs? Please address the cost questions asked in Question 7.

The FHWA requests that commenters address the specific questions above. However, the FHWA encourages commenters to include a discussion of any other issues that the commenters believe are relevant to the use and/or retrofitting of automatic brake adjusters and brake adjustment indicators on CMVs.

Rulemaking Analyses and Notices

All comments received before the close of business on the comment closing date indicated above will be considered and will be available for examination in the docket at the above address. Comments received after the comment closing date will be filed in

the public docket and will be considered to the extent practicable. In addition to late comments, the FHWA will also continue to file, in the public docket, relevant information that becomes available after the comment closing date. Interested persons should continue to examine the public docket for new material.

Executive Order 12866 (Regulatory Planning and Review) and DOT Regulatory Policies and Procedures

The FHWA has determined that this action is not a significant regulatory action within the meaning of Executive Order 12866 or significant within the meaning of Department of Transportation regulatory policies and procedures. This rule would, if adopted, provide a companion operational standard for brakes in the FMCSRs to make them consistent with the manufacturing standards in the FMVSSs 105 and 121. It would require automatic brake adjusters and brake adjustment indicators installed on newly manufactured CMVs in accordance with those manufacturing standards to be maintained by the motor carriers operating those vehicles. Based on the NHTSA studies, the FHWA believes that operation and maintenance costs of the automatic brake adjusters and adjustment indicators required under the new FMVSSs will be lower than costs of the devices previously required. Although the FHWA requests information concerning the possibility of requiring these devices to be retrofitted to CMVs placed in operation prior to the effective dates of FMVSSs 105 and 121, no rule to require such retrofitting is being proposed at this time. It is anticipated that the economic impact of this rulemaking will be minimal; therefore, a full regulatory evaluation is not required. If the FHWA proposes retrofitting of these devices at some future date, a regulatory evaluation of the effects of that action will be prepared at that time.

Regulatory Flexibility Act

In compliance with the Regulatory Flexibility Act (5 U.S.C. 601-612), the FHWA has evaluated the effects of this proposed rule on small entities. This rule would modify the operational standards for brakes in the Federal Motor Carrier Safety Regulations (FMCSRs) to make them consistent with the manufacturing standards in the Federal Motor Vehicle Safety Standards (FMVSSs) numbers 105 and 121, which now require the installation of automatic brake adjusters and adjustment indicators on certain newly-manufactured CMVs. As stated above,

the FHWA believes that operation and maintenance costs of the automatic brake adjusters and adjustment indicators required under the new FMVSSs will be lower than costs of the devices previously required. Therefore, the FHWA hereby certifies that this action would not have a significant economic impact on a substantial number of small entities.

Executive Order 12612 (Federalism Assessment)

This action has been analyzed in accordance with the principles and criteria contained in Executive Order 12612, and it has been determined that this action does not have sufficient federalism implications to warrant the preparation of a federalism assessment.

Paperwork Reduction Act

This action does not contain a collection of information requirement for purposes of the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.*

National Environmental Policy Act

The agency has analyzed this action for the purpose of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*) and has determined that this action would not have any effect on the quality of the environment.

Executive Order 12372 (Intergovernmental Review)

Catalog of Federal Domestic Assistance Program Number 20.217, Motor Carrier Safety. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program.

Regulation Identification Number

A regulation identification number (RIN) is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The RIN in the heading of this document can be used to cross reference this action with the Unified Agenda.

List of Subjects in 49 CFR Part 393

Freight Transportation, Highway safety, Highways and roads, Motor carriers, and Motor vehicle safety.

In consideration of the foregoing, the FHWA is proposing to amend title 49, Code of Federal Regulations, part 393, as follows:

PART 393—[AMENDED]

1. The authority citation for part 393 continues to read as follows:

Authority: Section 1041(b) of Pub. L. 102-240, 105 Stat. 1914, 1993 (1991); 49 U.S.C. 3102; 49 U.S.C. app. 2505; 49 CFR 1.48.

2. In Subpart C, § 393.53 is added to read as follows:

§ 393.53 Automatic brake adjusters and brake adjustment indicators.

(a) *Automatic brake adjusters (hydraulic brake systems).* Each commercial motor vehicle manufactured on or after October 20, 1993, and equipped with a hydraulic brake system, shall be equipped with an automatic brake adjustment system that meets the requirements of Federal Motor Vehicle Safety Standard No. 105 (49 CFR 571.105, S5.1) of this title) applicable to the vehicle at the time it was manufactured.

(b) *Automatic brake adjusters (air brake systems).* Each commercial motor vehicle manufactured on or after October 20, 1994, and equipped with an air brake system, shall be equipped with an automatic brake adjustment system that meets the requirements of Federal Motor Vehicle Safety Standard No. 121 (49 CFR 571.121, S5.1.8) applicable to the vehicle at the time it was manufactured.

(c) *Brake adjustment indicator (air brake systems).* On each commercial motor vehicle manufactured on or after October 20, 1994, and equipped with an air brake system which contains an external automatic adjustment mechanism and an exposed pushrod, the condition of service brake under-adjustment shall be displayed by a brake adjustment indicator conforming to the requirements of Federal Motor Vehicle Safety Standard No. 121 (49 CFR 571.121, S5.1.8) applicable to the vehicle at the time it was manufactured.

Issued on: July 28, 1994.

Rodney E. Slater,

Federal Highway Administrator.

[FR Doc. 94-18901 Filed 8-2-94; 8:45 am]

BILLING CODE 4910-22-P

National Highway Traffic Safety Administration

49 CFR Part 571

Lamps, Reflective Devices and Associated Equipment; Denial of Petition for Rulemaking

AGENCY: National Highway Traffic Safety Administration (NHTSA), DOT.

ACTION: Denial of petition for rulemaking.

SUMMARY: This notice denies a petition for rulemaking by Baran Advanced Technologies, Ltd., to amend Federal Motor Vehicle Safety Standard No. 108 to allow the abrupt release of the accelerator pedal to operate stop lamps. The reason for the denial is the importance of retaining the existing requirement for activating the stop lamps only through application of the brake pedal in order to avoid confusion.

FOR FURTHER INFORMATION CONTACT: Patrick Boyd, Office of Vehicle Safety Standards, NHTSA (202-366-6346).

SUPPLEMENTARY INFORMATION: Baran Advanced Technologies, Ltd. of Israel manufactures a device called "Red Alert" which is intended to activate the stop lamps during emergency braking before the brake pedal is applied, thereby providing an earlier warning for following vehicles. The device senses the rate at which the accelerator pedal returns to its upper stop after being released. It activates the stop lamps for one second if the accelerator pedal reaches its upper stop at greater than a certain predetermined rate. Its operation is based on the assumption that any rapid release of the accelerator pedal is the beginning of an emergency braking maneuver, and thus will be immediately followed by application of the brake pedal. Application of the brake pedal continues to activate the stop lamp in the usual way. If the brake pedal is depressed within one second of the release of the accelerator, the brake light will remain on at the end of the initial one second period of activation and thus provide a steady signal.

Standard No. 108 requires that stop lamps "shall be activated upon application of the service brakes." That requirement has been interpreted to mean that the stop lamps are to be activated only upon activation of the service brakes. Some years ago, Baran's competitor in the Israeli market, ATAT, sought an interpretation of Standard No. 108 that would allow the aftermarket installation of its similar Advanced Brake Light Device (ABLD) in the U.S. In a letter of January 25, 1990, to Larry Snowwhite, Esq., the agency concluded that accelerator release activation by an aftermarket device such as the ABLD would render the stop lamps partially inoperative within the meaning of the prohibition of 15 U.S.C. 1397(a)(2)(A). Said NHTSA:

The heart of our concern is that while the standard requires the stop lamp to operate in only one particular circumstance, the ABLD causes the stop lamp to operate at an earlier time when the lamp is supposed to be unlighted. Further, the ABLD's activation of the stop lamp indicates only that the operator has released the accelerator. It does not

necessarily follow that the brake pedal will be applied. Under this fact situation, the stop lamps fulfill a purpose other than for which they are installed. This can only create the potential for confusion and dilution of the effectiveness of the stop signal. For the reasons stated above, we have concluded that installation of the ABLD in the aftermarket would render the stop lamps partially inoperative.

Baran's "Red Alert" and ATAT's ABLD operate under the same fundamental principle of measuring the accelerator pedal return rate to anticipate emergency braking. ATAT did not report its threshold rate for accelerator pedal release. However, the fact that its false alarm rate is similar to that of the Baran system suggests that the activation of both systems is based on a similar threshold rate of accelerator release. These rates are discussed later in the notice.

NHTSA has examined Baran's petition in an effort to balance possible safety benefits of the device against the possible safety disbenefits of signal confusion.

The first issue is whether the petitioner can demonstrate that its device is likely to lessen the number of accidents. Baran estimates large reductions in rear-end accidents using figures from a paper by Enke "Possibilities for Improving Safety Within the Driver-Vehicle Environment Control Loop" and from a NHTSA report on Intelligent Vehicle Highway System (IVHS) countermeasures to rear end accidents (DOT HS 807 995). Enke's paper estimates that the impact speed of 25 percent of rear end accidents is no more than 10 km/hr (9 ft/sec) and that the amount of distance traveled at the assumed initial speed for 0.25 second equals the distance required to stop from the impact speed. Baran claims that "based on Enke's analysis, providing a driver with an additional .25 seconds of warning of an impending stop by the leading driver could result in a 25 to 30 percent reduction in all rear-end accidents."

NHTSA disputes this conclusion. Enke's analysis presumes that the following driver is attentive to the very first glimmer of a stop signal from the car ahead and that (s)he reacts immediately even though a speed differential has not yet occurred. It also presumes that the lead driver decelerates so rapidly that the following driver cannot "outbrake" the lead driver and that the initial distance between them is less than following driver's reaction time multiplied by the initial speed. NHTSA views these presumptions as unrealistic.

Further, NHTSA's IVHS report characterizes a rear-end crash as "largely a dry/straight road phenomenon associated with driver inattention." It found the lead vehicle stopped (LVS) in 75 percent of rear-end crashes, which

Typically do not involve simply a "too-slow" reaction of the following driver to a sudden crash threat. In the most common scenario, the lead vehicle is stopped for an extended interval (i.e., 2-6 seconds) before it is struck by the following vehicle. There is adequate time to provide a warning to the following driver and for the driver to avoid the crash. Vehicles involved in this crash subtype should not be viewed as a locked pair where one vehicle is following the other at a specified distance. Instead, the following vehicle is closing on a stationary object. The initial gap distance between the vehicles is often several hundred feet or more. No cases were identified where a lead vehicle decelerated rapidly and then was hit by a closely following vehicle immediately after coming to a stop.

It is difficult to see how a 0.25 second advance stop lamp warning would be of any use in the 75 percent of rear-end accidents in the LVS category when prolonged driver inattention appears to be a near universal cause.

The report characterized the remaining 25 percent of rear-end accidents, those in which the lead vehicle was moving (LVM) at impact, as follows:

In contrast, the LVM crash subtype may involve driver reaction time following a sudden crash threat as a critical factor. Vehicles involved in this circumstance are often "locked pairs" with one vehicle following the other. However, gaps or following distances can range from a few lengths to very substantial distances even in this subtype. Not all LVM crashes are precipitated by rapid deceleration of the lead vehicle. Many involve slow decelerations (e.g., typical slowing before a turn) or simply a speed differential between the lead and following vehicles.

This also indicates that driver inattentiveness is critical in LVM crashes. It is hard to accept that a 0.25 second advance in stop lamp activation would be of value to an inattentive following driver. NHTSA accepts the IVHS report as an accurate reflection of the conditions under which rear-end collisions happen, and has concluded that Red Alert would not provide an adequate warning to avoid these collisions in virtually all the circumstances under which they occur.

Nevertheless, a manufacturer should not be precluded from offering its product, even if safety benefits cannot be demonstrated, unless there are potential safety disbenefits created by the product. The agency objected to

ATAT's ABLD because it was not an unambiguous signal of brake application. NHTSA believed that such devices created the potential for confusion and dilution of the effectiveness of the stop signal. It pointed out that the activation of the stop signal under the requested circumstances only signified that the accelerator had been released. It did not necessarily follow that the brakes would be applied. The brakes were not applied 28 percent of time that the ABLD activated in a test report submitted by its proponent, ATAT. Similarly, the brakes were not applied 23 percent of the time the "Red Alert" activated in a test report submitted as part of Baran's petition.

However, both devices activated the stop lamps far less frequently than did the ordinary brake switch activated by depression of the brake pedal. During their respective tests, the ABLD activated the stop signal about 3 percent as frequently as the ordinary brake switch did. "Red Alert" activated the signal about 1.2 percent as frequently. Both tests compared the number of false alarms to the number of ordinary stop signal activations of one second or less. False alarms of "Red Alert" were about 2.4 percent as frequent as short brake applications, and false alarms of the ATAT device were reported as less than 10 percent as frequent as short brake applications. The conditions under which the two devices were tested differed greatly. ATAT used a special test course, three test vehicles and a limited number of test subjects who knew that some undisclosed part of their driving behavior was being evaluated. Baran installed "Red Alert" on six communal car pool vehicles that were operated for a period of months in ordinary traffic by various drivers who had no knowledge that their behavior was being measured. Given the large variations in activation and false alarm rates between test vehicles within each test and the differences in test conditions between the ABLD and "Red Alert" tests, there is no reason to believe that the two devices vary significantly in activation rate and false alarm performance.

The activation rate observed in both tests seems to be too high for true emergency braking actions, as neither test documented an actual incident of emergency braking. ATAT did not report either observing emergency maneuvers or questioning its subjects regarding such instances, but it did measure the foot movement times when the accelerator control activated the stop lamp. A range between 0.23 and 0.77 second was observed. When ATAT's

subjects were asked to perform fast accelerator to brake movements, the 5th and 95th percentile times were 0.10 and 0.28 second respectively. It appears that very few of the activations in ATAT's test of an accelerator controlled stop lamp were rapid enough to indicate an emergency. Baran did not report measurements of foot movement times, but it assumed that "Red Alert" activations were equivalent to instances of emergency braking. "Red Alert" was characterized as providing an advance warning of 0.35 second which falls outside of ATAT's rapid foot movement range.

Both manufacturers argued that the false alarms were insignificant because they were few in comparison to the quite large number of brake applications of less than one second. Baran also argued that the short brake applications themselves had little significance because the duration of brake effort would be further reduced by the time consumed to build up pressure and to release the brake pedal within one second. Baran pointed out that a short brake application may represent only a release of cruise control, a state of preparedness or a warning to other drivers. While these facts tend to diminish the importance of the systematic false alarms, they also demonstrate why following drivers are unlikely to act at the instant of the stop lamp illumination in the absence of closing speed or some other cue. All the test experience reported for accelerator controlled stop lamps involved leading and following drivers who were unaware of the use of the device. But this device facilitates intentional false alarms as well as systemic occurrences. Its widespread use would raise suspicions of intentional false alarms on the part of drivers in following vehicles. Intentional false alarms can and will occur, sending a misleading signal to the driver behind.

To sum up, the idea that a slightly anticipatory brake lamp will prevent large numbers of rear-end collisions is intuitively attractive. However, it ignores the fact that lack of driver attention is the root cause of rear-end accidents. It is unlikely that an extra quarter second of brake light activation would cure or offset the inattentiveness of a following driver.

The agency concludes that the potential safety benefits are minimal, but it will consider the results of the Israeli Highway Safety Administration's trial of accelerator-controlled stop lamps when they are available. While Baran's data indicate that the absolute numbers of systematic false alarms may be small on average, a perception by following

drivers that the brake signal allowed false alarms, whether or not intentional, might dilute the currently unambiguous message of the stop signal. The agency previously found that ATAT's device would render the stop lamp partially inoperative as a result of the same loss of unambiguous operation. There are no fundamental differences between the systems to cause the agency to change its determination or even to allow the agency to distinguish between them in a regulation.

Accordingly, NHTSA has conducted and concluded a technical review of the petition, and has determined that there is not a reasonable possibility that the amendment requested would be issued at the conclusion of a rulemaking proceeding. Accordingly, the petition by Baran Advanced Technologies, Ltd., for rulemaking to amend Standard No. 108 is denied.

Authority: 49 U.S.C. 30103; delegation of authority at 49 CFR 1.50 and 501.8.

Issued on: July 28, 1994.

Barry Felrice,

Associate Administrator for Rulemaking.

[FR Doc. 94-18802 Filed 8-2-94; 8:45 am]

BILLING CODE 4910-59-P

INTERSTATE COMMERCE COMMISSION

49 CFR Chapter X

[Ex Parte No. 274 (Sub-No. 13)]

Rail Abandonments—Use of Rights-of-Way as Trails—Supplemental Trails Act Procedures

AGENCY: Interstate Commerce Commission.

ACTION: Denial of petition for rulemaking.

SUMMARY: By petition filed March 29, 1994, the National Association of Reversionary Property Owners (NARPO) sought a rulemaking in order to amend the Commission's procedural rules concerning the Rails-to-Trails Program, 16 U.S.C. 1247(d). The Commission, however, has previously addressed similar arguments raised by NARPO. In a decision served February 21, 1990, the Commission, upon reconsideration of a decision served May 26, 1989, 54 FR 22970 (1989), declined to amend the rules implementing the National Trails System Act and found that the requirements sought by NARPO would be time-consuming, expensive, and burdensome and were not warranted given the Commission's limited involvement in trail use proposals and the purpose of the Trails Act, which is

to encourage and facilitate interim trail use.¹ The law applicable to our previous decisions has not changed. Therefore, NARPO's petition for rulemaking is denied.

FOR FURTHER INFORMATION CONTACT: Beryl Gordon, (202) 927-5610. [TDD for hearing impaired: (202) 927-5721.]

SUPPLEMENTARY INFORMATION: Additional information is contained in the Commission's decision. To purchase a copy of the full decision, write to, call, or pick up in person from Dynamic Concepts, Inc., Room 2229, Interstate Commerce Commission Building, Washington, D.C. 20423. Telephone: (202) 289-4357/4359. [Assistance for the hearing impaired is available through TDD services (202) 927-5721.]

Decided: July 27, 1994.

By the Commission, Chairman McDonald, Vice Chairman Phillips, and Commissioners Simmons and Morgan.

Vernon A. Williams

Acting Secretary

[FR Doc. 94-18862 Filed 8-2-94; 8:45 am]

BILLING CODE FR-7035-01-P

DEPARTMENT OF THE INTERIOR

Fish And Wildlife Service

50 CFR Part 17

RIN 1018-AC63

Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for Five Freshwater Mussels and Proposed Threatened Status for Two Freshwater Mussels From Eastern Gulf Slope Drainages of Alabama, Florida, and Georgia

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The Fish and Wildlife Service (Service) proposes to list seven freshwater mussels: The fat three-ridge (*Amblema neisleri*), shiny-rayed pocketbook (*Lampsilis subangulata*), Gulf moccasinshell (*Medionidus penicillatus*), Ochlockonee moccasinshell (*Medionidus simpsonianus*), and oval pigtoe (*Pleurobema pyriforme*) as endangered, and the Chipola slabshell (*Elliptio chipolaensis*) and purple bankclimber (*Elliptio sloatianus*) as threatened under the Endangered Species Act (Act) of 1973, as amended. These mussels are endemic to eastern Gulf Slope streams

draining the Apalachicola Region of southeast Alabama, southwest Georgia, and north Florida. They are currently known from localized portions of from one to four isolated marine river systems, mostly in the eastern portion of the Apalachicola Region.

Impoundments and deteriorating water and benthic (bottom) habitat quality resulting from channel modification, siltation, agricultural runoff, silvicultural activities, mining activities, pollutants, poor land use practices, increased urbanization, and waste discharges have resulted in the restriction and fragmentation of these mussels current ranges. In addition, the Service has little evidence to suggest that populations of these seven species of mussels are reproductively viable.

DATES: Comments from all interested parties must be received by November 1, 1994. Public hearing requests must be received by September 19, 1994.

ADDRESSES: Comments and materials concerning this proposal should be sent to the Field Supervisor, U.S. Fish and Wildlife Service, Jacksonville Field Office, 6620 Southpoint Drive South, Suite 310, Jacksonville, Florida 32216 (904/232-2580). Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Mr. Robert S. Butler at the above address.

SUPPLEMENTARY INFORMATION:

Background

The fat three-ridge, shiny-rayed pocketbook, Gulf moccasinshell, Ochlockonee moccasinshell, oval pigtoe, Chipola slabshell, and purple bankclimber are freshwater mussels endemic to eastern Gulf Slope streams draining the Apalachicola Region (streams from the Escambia to the Suwannee river systems in southeast Alabama, southwest Georgia and north Florida). The Apalachicola Region primarily drains the Coastal Plain Physiographic Province. Only the headwaters of the Flint and Chattahoochee rivers, in the Apalachicola River system, occur above the Fall Line in the Piedmont Physiographic Province in west-central Georgia. Streams draining the East Gulf Coastal Plain are generally low gradient and have substrates of sand, silty sand, mud, and gravel. Some streams, particularly in the Apalachicola River system, have coarser substrates of cobble, boulders, and bedrock in addition to areas with softer bed materials. The seven species of mussels being considered for listing inhabit

¹ Rail Abandonments—Use of Rights-Of-Way as Trails—Supplemental Trails Act Procedures, Ex Parte No. 274 (Sub-No. 13) (ICC served Feb. 21, 1990) at 1-2.

medium-sized streams to large rivers with substrates of silty sand, sand, or gravel, and mixtures of these substrates. All are generally found in areas with water currents, often in stream channels swept free of silt. The life histories of these seven species of mussels are unknown and little biological information is available.

The Apalachicola Region is known for its high level of endemism, harboring nearly 30 species of endemic mussels (Butler 1989), at least a dozen fishes, over 20 aquatic snails, and nearly two dozen species of crayfish. In addition, several candidate species from the Service's animal notice of review published on November 21, 1991 (56 FR 58804) are also known from the Apalachicola Region, the majority being endemic to these drainages. One of these candidates, the Ochlockonee arc-mussel is thought to be extinct (Turgeon *et al.* 1988), last reported in the early 1930's (Williams and Butler, in press). A recent status survey for candidate species of mussels in the Apalachicola River system did not locate any populations of the winged spike and lined pocketbook, species endemic to this system that were last sighted in 1958 and 1967, respectively. Between 1991 and 1993, the Service's National Fisheries Research Center, now the National Biological Survey, Biological Science Center, in Gainesville, Florida, completed field surveys for mussels in both the Apalachicola (325 collections at 315 sites) and Ochlockonee (77 collections at 72 sites) river systems. These surveys are summarized by Butler (1993), and the information is sufficient to support a status recommendation of endangered for the fat three-ridge, shiny-rayed pocketbook, Gulf moccasinshell, Ochlockonee moccasinshell, and oval pigtoe, and a status recommendation of threatened for the Chipola slabshell and purple bankclimber. Common and scientific nomenclature used in this rule follows that suggested by Turgeon *et al.* (1988).

The fat three-ridge (*Amblema neislerii*) is a medium-sized to large, subquadrate, inflated, solid, and heavy shelled mussel that reaches a length of 102 millimeters (4.0 inches). Older individuals are often so inflated that their width approximates their length. The dark brown to black shell is strongly sculptured with seven to eight prominent horizontal parallel ridges. Internally, there are two subequal pseudocardinal teeth in the left valve and one large and one small tooth in the right valve. The nacre is bluish white to light purplish and very iridescent. The

Service considers *Unio neislerii* to be a synonym of *Amblema neislerii*.

This taxon was originally assigned to the genera *Quadrula* and *Crenodonta* by Simpson (1914) and Clench and Turner (1956), respectively. Subsequent investigators have placed the fat three-ridge in the genus *Amblema*. The fat three-ridge was described from the Flint River, Macon County, Georgia, and it historically occurred in the mainstems of the lower two-thirds of the Flint, the lower one-third of the Chipola, and in the Apalachicola rivers (Clench and Turner 1956, Butler 1993). Since 1981, no live specimens have been found in the Flint River. Its present range is restricted to six localities in Florida, three each in the Apalachicola River mainstem and the lowermost Chipola River mainstem (Butler 1993). Only two of these localities have sizable populations, which number in the dozens of specimens. However, the viability of these populations of the fat three-ridge is not known. The fat three-ridge has a very low tolerance for impoundments.

The shiny-rayed pocketbook (*Lampsilis subangulata*) is a medium-sized mussel that reaches approximately 85 mm (3.3 in) in length. The shell is subelliptical, with broad, somewhat inflated umbos and a rounded posterior ridge. The fairly thin but solid shell is smooth and shiny, and light yellowish brown with fairly wide bright emerald green rays over its entire length. Older individuals appear much darker brown with obscure raying. Internally, the pseudocardinal teeth are double and fairly large and erect in the left valve with one large tooth and one spatulate tooth in the right valve. The nacre is white, with some individuals exhibiting a salmon tint in the vicinity of the umbonal cavity. The Service recognizes *Unio subangulatus* and *Unio kirklandianus* as synonyms of *Lampsilis subangulata*.

The shiny-rayed pocketbook was described from the Chattahoochee River, Columbus, Georgia. Historically, this mussel occurred at 18 different Flint River system localities including numerous tributaries and several mainstem sites, 1 Chattahoochee River mainstem site and 6 sites in some of its tributaries, 2 sites in an Apalachicola River tributary (Mosquito Creek), a couple of Chipola River tributary sites and several localities in the mainstem above Dead Lake, and several sites in the Ochlockonee River mainstem from Talquin Reservoir upstream to Georgia and in a couple of its tributaries (Clench and Turner 1956, Butler 1993). The 19 populations presently known are restricted to: a single Uchee Creek

system site in the Chattahoochee River system of Alabama, 11 scattered sites in Flint River tributaries, 2 sites in the Chipola River system including a mainstem and tributary (Dry Creek) site, and 5 Ochlockonee River mainstem and tributary sites in the upper half of the system (Butler 1993). The shiny-rayed pocketbook presently occupies about two-thirds of its original range. Population sizes numbered in the dozens of individuals at a few historical sites in both systems. However, recent collections are generally represented by only a few individuals, and evidence of any production is scarce. This riverine species does not tolerate impoundments.

The Gulf moccasinshell (*Medionidus penicillatus*), a small mussel, reaches a length of about 55 mm (2.2 in), is elongate-elliptical or rhomboidal in shape and fairly inflated, and has relatively thin valves. The ventral margin is nearly straight or slightly rounded. The posterior ridge is rounded to slightly angled and intersects the end of the shell at the base line. Females tend to have the posterior point above the ventral margin and are somewhat more inflated than males. Sculpturing consists of a series of thin, radially-oriented plications along the length of the posterior slope. The remainder of the shell surface is smooth and yellowish to greenish brown with fine, typically interrupted green rays. The left valve has two stubby pseudocardinal and two arcuate lateral teeth and the right valve has one pseudocardinal and one lateral tooth. Nacre color is smokey purple or greenish and slightly iridescent at the posterior end. The Service recognizes *Unio penicillatus* and *Unio kingi* as synonyms of *Medionidus penicillatus*.

Much confusion clouds the taxonomy of *Medionidus* species in the Apalachicola Region. In the Chipola River system, van der Schalie (1940) recorded two species of *Medionidus* (*M. kingi* and *M. penicillatus*). Clench and Turner (1956) synonymized *M. kingi* and two other nominate species, the Ochlockonee moccasinshell and Suwannee moccasinshell with the Gulf moccasinshell, an arrangement also followed by Burch (1975). Johnson (1970) erroneously reported both the Gulf moccasinshell and Suwannee moccasinshell from the Apalachicola River system and the Suwannee moccasinshell from the Ochlockonee and Suwannee rivers as well. In his monograph on *Medionidus*, Johnson (1977) recognized the validity of the Gulf moccasinshell, Ochlockonee moccasinshell, and Suwannee moccasinshell from Apalachicola

Region streams based on shell characters. Turgeon *et al.* (1988) also recognized the validity of these three allopatrically distributed mussels.

The Gulf moccasinshell was described from three sites in the Apalachicola River system in Georgia: the Chattahoochee River near Columbus and Atlanta, and the Flint River near Albany. The historical distribution of this diminutive species included 18 sites in the tributaries and mainstems of the Flint and Chattahoochee rivers, one Apalachicola River site, and 12 sites in the Chipola River system. The Gulf moccasinshell is known from 38 historical sites and has been eliminated from about three-quarters of its original range. It persists at eight tributary sites in the middle Flint River system, and in Econfinia Creek (Butler 1993) but has not been collected in the Choctawhatchee River system since the early 1930's. Large populations (60+ individuals) were documented at several of historical sites in the Chipola River system (van der Schalie 1940); they probably occurred in similar numbers at other sites as well. However, recent collections of the Gulf moccasinshell indicate that only small populations persist today. The Service's recent survey of the Apalachicola River system located a total of only 10 specimens. Given the small sample sizes, the population viability of this species is questionable. The Gulf moccasinshell does not tolerate impoundments.

The Ochlockonee moccasinshell (*Medionidus simpsonianus*) is a small species, generally under 55 mm (2.5 in) in length. It is slightly elongate-elliptical in outline with the posterior end obtusely rounded at the shells median line and the ventral margin broadly curved. The posterior ridge is moderately angular and covered in its entire length with well developed, irregular ridges. Sculpturing may also extend onto the disk below the ridge and the surface texture is smooth. The color is light brown to yellowish green, with dark green rays formed by a series of connecting chevrons or undulating lines across the length of the shell. Internal characters include thin straight lateral teeth and compressed pseudocardinal teeth. There are two laterals and two pseudocardinals in the left valve and one lateral and one pseudocardinal in the right valve. The nacre is bluish white. The Service considers *Unio simpsonianus* to be a synonym of *Medionidus simpsonianus*.

The Ochlockonee moccasinshell was described from the Ochlockonee River, Calvary, Grady County, Georgia. This mussel was known historically from six sites in the mainstem above Talquin

Reservoir, three each in Georgia and Florida, and single site locations on the lower mainstem below Talquin Reservoir and in the Little River (Johnson 1977, Butler 1993). However, since 1974, the Ochlockonee moccasinshell has been represented by only two live individuals (both found as individuals at a single site in the mainstem above Talquin Reservoir in Florida in the past 5 years) despite concerted efforts by numerous investigators to locate additional populations. Four weathered dead shells were found at other mainstem sites in the past few years, including two sites in Georgia and one site in Florida. Once a fairly common species, with some populations numbering in the dozens of individuals, the Ochlockonee moccasinshell is now one of the rarest mussels in North America. This narrow endemic does not tolerate impoundment conditions.

The oval pigtoe (*Pleurobema pyriforme*) is a small to medium-sized mussel that attains a length of about 60 mm (2.4 in). The shell is suboviform compressed, with a shiny smooth epidermis. The periostracum is yellowish, chestnut, or dark brown, rayless, and with distinct growth lines. The posterior slope is biangulate and forms a blunt point on the posterior margin. The umbos are slightly elevated above the hingeline. As is typical of the genus, no sexual dimorphism is displayed in shell characters. Internally the pseudocardinal teeth are fairly large, crenulate and double in both valves. The lateral teeth are somewhat shortened, arcuate and double in each valve. Nacre color varies from salmon to bluish white and is iridescent posteriorly. Variation in this species has led to the description of various nominal species. The Service recognizes *Unio pyriforme*, *Unio modicus*, *Unio bulbosus*, *Unio amabilis*, *Unio reclusum*, *Unio harperi*, and *Pleurobema simpsoni* as synonyms of *Pleurobema pyriforme*.

The oval pigtoe was described from the Chattahoochee River, near Columbus, Georgia. Historically, this species was one of the most widely distributed mussels endemic to the Apalachicola Region. It occurred throughout the mainstems and several tributaries of both the Flint (16 sites) and Chipola (10 sites) river systems, at 5 sites in the Chattahoochee River system including one mainstem site, all associated with the Fall Line in Alabama and Georgia, at 6 sites in the Ochlockonee River mainstem above Talquin Reservoir in Florida and Georgia, at a single site on the lower Suwannee River and 15 sites in the

upper Santa Fe River system, its major tributary, in north Florida, and at a site in Econfinia Creek, in northwest Florida (Clench and Turner 1956, Butler 1993). Fifty-four total historical sites are known. Existing populations have been verified from 21 sites, including 5 scattered tributaries (7 sites) of the Flint River system and a single mainstem site, 4 Chipola River sites and 1 in its tributary Dry Creek, 6 upper Ochlockonee River mainstem sites, and single sites in both the New River in the upper Santa Fe River system, and in Econfinia Creek (Butler 1993).

Recent surveys have documented the extirpation of the oval pigtoe from approximately two-thirds of its historical range, with no populations persisting in Alabama. Once a species of localized abundance (Clench and Turner 1956), oval pigtoe populations sometimes numbered in the hundreds (van der Schalie 1940). However, recent collections of the oval pigtoe are generally small, and rarely exceed a dozen individuals at any one site. The Service in its recent survey located only a single specimen from the entire Flint River mainstem. It is not known whether existing populations are sufficient in numbers to sustain the species. The oval pigtoe does not tolerate impoundments.

The Chipola slabshell (*Elliptio chipolaensis*) is a medium-sized species reaching a length of about 85 mm (3.3 in). The shell is ovate to subelliptical, somewhat inflated and with the posterior ridge starting out rounded but flattening to form a prominent biangulate margin. The shell surface is smooth and chestnut in color. Dark brown coloration may appear in the umbonal region and the remaining surface may exhibit alternating light and dark bands. The umbos are prominent, well above the hingeline. Internally, the umbonal cavity is rather deep. The lateral teeth are long, slender, and slightly curved, with two in the left and one in the right valve. The pseudocardinal teeth are compressed and crenulate, with two in the left and one in the right valve. Nacre color is salmon, becoming more intense dorsally and somewhat iridescent posteriorly. The Service considers *Unio chipolaensis* to be a synonym of *Elliptio chipolaensis*.

The Chipola slabshell was described from the Chipola River in Florida. Clench and Turner (1956) restricted the type locality to the Chipola River, 1 mile north of Marianna, Jackson County, Florida. Until recently, this species was considered endemic to the Chipola River system, occurring in the mainstem above Dead Lake and a few of the larger

tributaries, all in Florida (van der Schalie 1940, Clench and Turner 1956). A single record of this mussel from a tributary of the Chattahoochee River in extreme southeastern Alabama has been verified by Butler (1993). These localities bring the total number of historic sites the Chipola slabshell inhabited to nine. The Chipola slabshell is known to persist only at four Chipola River mainstem sites and in Dry Creek, with the populations from Spring Creek (Chipola River system) and the Chattahoochee River system apparently extirpated. The numbers of specimens from recent collections indicate that populations are generally small, except at one site in the lower mainstem where three dozen specimens were recently observed (W. McCullagh, pers. comm.). The Chipola slabshell has the most restricted range of the Apalachicola Region mussels. This species does not tolerate impoundments, but is more tolerant of silt than the other species of mussels.

The purple bankclimber (*Elliptioideus sloatianus*) is a large, heavy shelled, strongly sculptured mussel reaching a length of about 200 mm (8.0 in). A well developed posterior ridge extends from the umbos to the posterior ventral margin of the shell. The posterior slope and the disk just anterior to the posterior ridge are sculptured by several irregular ridges that vary greatly in development. Umbos are low, extending just above the dorsal margin of the shell. Internally, there is one pseudocardinal tooth in the right valve and two in the left valve. The lateral teeth are very thick and slightly curved. Nacre color is whitish near the center of the shell becoming deep purple towards the margin, and very iridescent posteriorly. The Service recognizes *Unio sloatianus*, *Unio atomarginatus*, *Unio aratus*, and *Unio plectophorus* as synonyms of *Elliptioideus sloatianus*. The purple bankclimber was described from the Chattahoochee River and its type locality is restricted to the Chattahoochee River at Columbus, Georgia (Clench and Turner 1956).

Historically, the purple bankclimber was found at 14 sites in the Flint River system; 3 sites on the Chipola River mainstem (Dead Lake vicinity); 2 sites on the Apalachicola River mainstem; the type locality on the Chattahoochee River; and at 4 sites along the lower two-thirds of the Ochlockonee River mainstem in Florida and Georgia (Clench and Turner 1956, Butler 1993). A total of 24 historic sites are known for this species.

This large mussel persists at 10 sites in the lower two-thirds of the Flint River mainstem, at 4 sites in the

Apalachicola River, and at 8 sites in the Ochlockonee River mostly above Talquin Reservoir (Butler 1993). Although the purple bankclimber is currently known from only two fewer total sites than before, the species has nevertheless experienced a significant reduction in its total range. No specimens in recent years have been reported from the Chipola River and the species has not been collected in the Chattahoochee River for several decades. In addition, Flint River tributary populations appear to have been totally eliminated. At a few sites in the Florida portion of the Ochlockonee River, the purple bankclimber may number in the dozens of individuals. This species of mussel does not tolerate impoundment conditions well.

On November 18, 1993, the Service notified (by mail; 72 letters) Federal and State agencies, local governments, and interested individuals that a status review was being conducted for these seven species. A total of ten comments was received as a result of this notification. The Florida Division Office of the Federal Highway Administration replied that no bridge replacement projects were currently being planned in northwest Florida, and it was anticipated that any future bridge replacement projects would have no effect on these species based on the localized and short-term impacts associated with these activities. The Federal Energy Regulatory Commission reported that it licenses 12 hydroelectric development projects in the study area, and that any issues concerning these species could best be coordinated with the Office of Hydropower Licensing. The Fayette County (Georgia) Board of Commissioners expressed concern over the Service's contention that impoundments have played a major role in the decline of these species, but they did not oppose the listing. The Alachua County (Florida) Environmental Protection Department, after consultation with a Florida Museum of Natural History malacologist, indicated that none of these seven species of mussels are known or were suspected to occur in Alachua county. The Florida Game and Fresh Water Fish Commission expressed concern with how its plan to dredge the mouths of several silted-in streams along the Apalachicola River to improve access to striped bass might have on these mussels. The Georgia Department of Natural Resources (GDNR) had some questions concerning the distribution of these mussels, particularly in Georgia. The Florida Natural Areas Inventory supported the Service's listing of these

species and provided information on Econfinna Creek watershed where the Gulf moccasinshell and oval pigtoe occur. Three experts on freshwater mussels supported the potential Federal protection of these species. No objections to the proposed listing of these species were received.

Previous Federal Action

The purple bankclimber, oval pigtoe, shiny-rayed pocketbook, and fat three-ridge are included as category 2 species in the Service's notices of review for animal candidates that were published in the Federal Register on January 6, 1989 (54 FR 554) and on November 21, 1991 (56 FR 58804). A category 2 species is one that may be in need of listing as endangered or threatened, but for which conclusive data on biological vulnerability and threat are not currently available to support a proposed rule. Based on status surveys that were completed in 1993, the Service has determined that all of the species included in this proposal now qualify as category 1 species.

Summary of Factors Affecting the Species

Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to the fat three-ridge (*Amblema neislerii*), shiny-rayed pocketbook (*Lampsilis subangulata*), Gulf moccasinshell (*Medionidus penicillius*), Ochlockonee moccasinshell (*Medionidus simpsonianus*), oval pigtoe (*Pleurobema pyriforme*), Chipola slabshell (*Elliptio chipolaensis*), and purple bankclimber (*Elliptioideus sloatianus*) are as follows:

A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

These species of mussels are endemic to the eastern Gulf Slope streams draining the Apalachicola Region of southeast Alabama, southwest Georgia and north Florida. They are currently found in localized portions of from one to four isolated marine river systems, mostly in the eastern portion of the Apalachicola Region. These species have been rendered vulnerable to extinction by the significant loss of habitat within their restricted ranges in Apalachicola Region streams. Factors

contributing to this habitat loss are: impoundments and deteriorating water and benthic habitat quality resulting from channel modification, siltation, agricultural runoff from crop monoculture and poultry farms, silvicultural activities, mining activities, pollutants, poor land use practices, increased urbanization, and municipal and industrial waste discharges.

A consideration of the effects of these impacts upon fishes is of critical importance in evaluating the well-being of mussels. Mussels and fishes are inextricably linked ecologically; most larval mussels (glochidia) are obligate parasites of specific fishes. Therefore, these various impacts may have resulted in the elimination of certain fishes that serve as potential host species for these mussels.

Impoundments have altered a significant portion of the free-flowing big river habitats of the Apalachicola and Ochlockonee river systems in which most of these species occur. Stream habitat is destroyed by the conversion of free-flowing streams to man-made lakes and ponds. In addition to riverine habitat destruction, dams block the passage of certain migratory fishes which serve as hosts for one or more of these seven mussel species. None of these seven mussel species are known to reproduce in impoundments.

The Apalachicola River system has been especially impacted by the construction of numerous mainstem dams. This is true for the Chattahoochee River, which has nine major dams and four locks and dams along its lower mainstem to facilitate barge traffic. Additional major dams are located on the Flint River mainstem (e.g., Blackshear Reservoir) and on the Apalachicola River where it is formed by the confluence of the Chattahoochee and Flint Rivers (Seminole Reservoir). Smaller dams are located on major rivers and tributaries throughout the Apalachicola River system and in other regional streams. Although pre-impoundment records are generally unknown for the fat three-ridge, shiny-rayed pocketbook, Gulf moccasinshell, oval pigtoe, and purple bankclimber in the Apalachicola River system, numerous populations of these species were possibly destroyed as a result of impoundments. It has been decades since any live specimens of these five species were found along the Chattahoochee River mainstem; the type locality for the shiny-rayed pocketbook, Gulf moccasinshell, oval pigtoe, and purple bankclimber.

Talquin Reservoir, an impoundment on the Ochlockonee River formed by the closure of Jackson Bluff Dam, inundated

a significant reach of the middle portion of the river mainstem. Pre-impoundment records for the shiny-rayed pocketbook, Ochlockonee moccasinshell, oval pigtoe, and purple bankclimber from a site at the upstream end of Talquin Reservoir exist in museum collections. Most of these mussel species once had sizable populations at this site. Undocumented populations of these four species were probably destroyed by the filling of Talquin Reservoir.

In addition to riverine habitat being destroyed by Talquin Reservoir, the river downstream of Jackson Bluff Dam shows noticeable signs of being impacted by sediment deposition. Riverine mussels such as the shiny-rayed pocketbook, Ochlockonee moccasinshell, oval pigtoe, and purple bankclimber, are nearly absent in sizable stretches of this heavily silted river. One site recently sampled by the Service (with SCUBA gear) had deposits of detritus and silt sediments. The river lacked flows adequate to flush the channel of silty sediments. Potential lower mainstem channel habitat of the shiny-rayed pocketbook, Ochlockonee moccasinshell, oval pigtoe, and purple bankclimber are being impacted by this deposition.

Navigation channel maintenance in the Chattahoochee and Apalachicola Rivers has destroyed long stretches of benthic habitat. In addition to the damage caused by the mechanical removal of tons of substrate, these activities increase sedimentation in downstream areas by resuspending silt fines which smother benthic organisms. Dredging activities may also resuspend contaminants that are bound to sediments, thus potentially exposing aquatic organisms to released toxicants. Potential host fishes for the fat three-ridge and purple bankclimber in the Apalachicola River may also be disrupted by channel modifications. Maintenance operations in the Apalachicola River mainstem continue to disrupt habitat for these two species. A third mussel, the Gulf moccasinshell, has apparently been extirpated from the Apalachicola River.

Gravel mining operations have been observed in various portions of the Apalachicola Region. Primary stream impacts associated with gravel mining include stream channel modifications (alterations of habitat, flow patterns, and sediment transport), water quality modifications, aquatic invertebrate population changes and changes in fish populations (alteration and elimination of spawning and nursery habitats, and food web disruptions) (Kanehl and Lyons 1992). Channel degradation

caused by gravel mining has been implicated in the destruction of mussel populations (Hartfield 1993, Grace and Buchanan 1981). In a study by Grace and Buchanan (1981), mussels were still absent from an in-stream dredged area 15 years after mining took place. Siltation is particularly increased during the mining of in-stream gravel and/or during the washing of gravel which rinses silt and debris back into the stream. Gravel from the Chattahoochee River is used for various purposes including landscaping throughout the region. Jenkinson (1973) recorded the shiny-rayed pocketbook, oval pigtoe, Gulf moccasinshell, and 10 other mussel species in Little Uchee Creek (Chattahoochee River system) in Alabama. The creek now has active in-stream gravel mines; only a few shell fragments were found during a recent survey by the Service.

Municipal and industrial pollutants are widespread in Apalachicola Region streams. Many municipal waste water treatment plants provide only secondary treatment of waste water and three plants discharging wastes into the New River (Suwannee River system) threaten that stream's population of the oval pigtoe. From 1955 to 1977, an estimated 950,000,000 gallons of chemical-laden solutions were discharged into the Flint River from a Department of Defense facility in Albany, Georgia (P. Laumeyer, Service, pers. comm.). Service biologists surveyed a stretch of the Flint River where dozens of purple bankclimbers had been killed by an unknown pollutant. Hundreds of round washboards (*Megalonia boykiniana*) were found dead in the upper Flint River (C. Coney, Los Angeles County Museum, pers. comm.) and various beds of dead mussels (species unknown) were observed in the Suwannee River (L. Parker, Service, pers. comm.). A battery plant operation threatens water quality in the Chipola River system, which harbors populations of the fat three-ridge, shiny-rayed pocketbook, oval pigtoe, and Chipola slabshell.

Various agricultural practices conducted in the Apalachicola Region have contributed to stream and habitat degradation. A Soil Conservation Service (1993) study of a small agricultural watershed area in the middle Flint River system reported an average of 35.44 metric tons per hectare per year (15.8 tons per acre per year) of sediment loading into area waters; 97% of the total sedimentation in the watershed was generated from agricultural runoff. Agricultural runoff, in the form of organophosphate or carbamate pesticides, has been implicated in the die-off of populations

of freshwater mussels (J. Fleming, National Biological Survey, unpub. data). The poultry industry is expanding operations into the Apalachicola Region, particularly in the watersheds of the upper Apalachicola River system. Runoff from chicken farms causes oxygen depletion in streams and has been implicated in fish and mussel die-offs in Alabama (U.S. Fish and Wildlife Service 1993). Feedlots are also another source of pollution in localized portions of the region's streams. Large dairy farms located in the Suwannee River watershed also contribute to the pollution of this system's waters.

Erosion from poor land use practices causes extensive loss of topsoil and the subsequent siltation of stream bottoms. Sources of siltation include timber clearcutting and other silvicultural activities, clearing of riparian vegetation for agricultural purposes, and those construction and mining practices that allow exposed earth to enter streams. Light to moderate levels of siltation are common in many of the streams in the Apalachicola Region that still have populations of these seven mussel species. Heavily silted streams were observed by Service biologists in numerous tributaries of the Chattahoochee and upper Flint Rivers, particularly those draining the Piedmont Physiographic Province, which is well known for its highly erodible soils. Stream banks devoid of riparian vegetation commonly slough off into stream channels. Several clearcuts have been observed in watersheds of the middle Apalachicola River system, some with inadequate riparian buffer strips (J. Brim-Box, Service, pers. comm.). A disregard for maintaining riparian buffers during silvicultural activities threatens streams throughout the Apalachicola Region. Continued siltation and sedimentation of these streams may result in a depauperate fish fauna, reducing populations at many sites to those dominated by species tolerant of degraded habitats. The negative effects of silt on benthic fishes were summarized by Burkhead and Jenkins (1991). Siltation reduces habitat heterogeneity and increases fish egg and larval mortality, abrades organisms, and alters macrobenthic communities.

The health of these seven mussel species is directly tied to benthic habitat quality. The effects of siltation on freshwater mussels is more devastating than on fishes due to the sedentary nature of mussels. Ellis (1936) conducted experiments on the effects of silt on mussels and determined that most mussels tested died from silt deposits of one quarter to one inch. Silt also transfers organic substances into

streams, adversely affecting stream habitat and water quality by producing increased and localized enrichment impacts (Ellis 1936).

Artifact and fossil collectors regularly work streams in various portions of the Apalachicola Region and have been known to use suction dredges to scour benthic habitats, thus increasing siltation downstream. A study on the effects of suction gold dredging on stream invertebrates (Harvey 1986) concluded that impacts from these activities are more severe in streams with soft substrates, which are typical for most Apalachicola Region streams where these mussels occur.

Much non-agricultural and non-silvicultural habitat degradation in the upper Apalachicola River system watershed is attributed to increased urbanization, particularly in the metropolitan areas of Atlanta, Columbus, and Albany. This current high rate of development is resulting in the conversion of farmland in areas relatively remote from these cities. Associated with increased development and land clearing is increased siltation from erosion, accelerated runoff and transport of pollutants in stormwater, and increased discharge of effluents.

The tributaries harboring populations of these seven mussel species are crisscrossed by numerous road and railroad bridges. These crossings are potential sites for accidental spills of toxic materials into streams. The large number of bridge crossings in the Apalachicola Region makes it probable that such a spill might occur in the future.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes.

The fat three-ridge is a potential target species for the cultured pearl industry. Currently a congener (the three-ridge, *Amblema plicata*) is heavily utilized as a source of shell for pearl nuclei in more northern rivers. Due to a tremendous increase in the price of shell, the harvesting of shell beds has resulted in the scouting of larger drainages in the Apalachicola Region for potential sources of shell. Although prices have decreased since 1992, future increases in shell price and competition for harvestable populations can not be ruled out. Biological supply companies have utilized the Flint and Ochlockonee rivers as sources for larger mussel specimens, including the purple bankclimber and possibly the fat three-ridge, to sell to academic institutions for use in laboratory studies. Supply company representatives have contacted Service biologists in hopes of obtaining

information on new, unexploited mussel populations in the Apalachicola Region. On one recent occasion, approximately 10,000 large mussel specimens, presumably including the purple bankclimber and possibly the fat three-ridge, were harvested from the Flint River near Bainbridge for this purpose (J. Brim-Box, pers. comm.). Some of these species are a potential source of raw material for the polished chip industry. Costume jewelry crafted from purple bankclimber shells has been observed in arts and crafts fairs in the Southeast. Unregulated harvest of the fat three-ridge and purple bankclimber for these purposes, if unchecked, could decimate their remaining populations. Small and/or thin-shelled mussel species, such as the other five mussels considered here, are not known to be utilized commercially.

There are a large number of shell clubs in Florida and surrounding States. Both national and international meetings for amateur and professional malacologists are held in this area, and generally include organized field collecting trips to a variety of habitats. The attraction of large numbers of people interested in the study and collection of mollusks increases the potential for overcollection of these mussels. These species, particularly the larger ones, are potential bait species, and are susceptible to harvesting especially during low-flow periods. Publication of this rule will inform the general public as to the presence of these seven mussels in Apalachicola Region streams. The rarity of these mussels potentially makes them more appealing to shell collectors. Thus, revealing specific stream reaches harboring these species could pose a threat from such collectors. Federal protection would serve to minimize adverse population impacts from illegal take.

C. Disease or Predation.

Although diseases of freshwater mussels are virtually unknown, the periodic dieoff of mussel populations in several primarily midwestern rivers in recent years may be due to unidentified diseases. Juvenile and adult mussels serve as prey for various animals, and the muskrat has been implicated in jeopardizing recovery of listed mussels (Neves and Odum 1989). Muskrats do not occur with regularity on Coastal Plain streams, where most of these mussels exist. However, Piedmont populations of the shiny-rayed pocketbook and oval pigtoe in the upper Flint River system may be subjected to some degree of muskrat predation.

D. The Inadequacy of Existing Regulatory Mechanisms

A scientific collecting permit is required by the State of Georgia to collect mussels for scientific purposes. However, dredging, brailing, or any form of mechanical harvest of mussels is illegal. In addition, a size limit has been placed on mussels harvested commercially in Georgia. Handpicking mussels requires only a resident or non-resident fishing license. In the State of Florida an individual must purchase a fishing license to collect mussels. Despite these permit requirements, there are no restrictions on the seasonality or sites of harvest, quantity, or species of mussels collected in Florida or Georgia. Alabama has recently imposed a set of guidelines concerning commercial harvest of mussels, including species-specific size limits, restricted areas for harvest, and closed seasons. Existing authorities available to protect aquatic systems, such as the Clean Water Act, administered by the Environmental Protection Agency (EPA) and the Army Corps of Engineers, have not been fully utilized and may have led to the degradation of aquatic environments in the Southeast Region, thus resulting in a decline of aquatic species. If these seven species are listed under the Act, it would provide protection under section 9 of the Act by prohibiting the take of these species except under Federal permit. Further, listing will require consultation with the EPA in relationship to water quality criteria, standards, and National Pollution Discharge Elimination System permits under the Clean Water Act, and implementation of actions to recover the species.

E. Other Natural or Manmade Factors Affecting Its Continued Existence

The range of these seven mussel species has been fragmented, and significant portions of the Apalachicola and Ochlockonee river systems have been permanently altered by various reservoirs. Many of the streams these species inhabit exhibit moderate to heavy degradation from poor land use practices. These factors have caused local extirpation and fragmentation of most of these species' populations. It is not known how many populations of these seven species are viable, but few juveniles have been observed in recent years. The restricted distribution of these seven mussels makes them vulnerable to extirpation from catastrophic events, such as toxic chemical spills.

The introduced Asian clam (*Corbicula fluminea*) has invaded nearly all of the

river systems in which these mussels occur, competing with native mussels for nutrients and space. Densities of Asian clams are sometimes heavy in Apalachicola Region streams, with estimates running from approximately one hundred per square meter (Flint River, Sickel 1973) to thousands per square meter (Santa Fe River, Bass and Hitt 1974). In some streams the substrate has changed from one of a fairly homogeneous silty sand or sand to one with a gravel-like composition comprised of huge numbers of live and dead Asian clam shells. In some of these streams, the Gulf moccasinshell and Ochlockonee moccasinshell were once common but are now extirpated or severely reduced in numbers. This exotic species may be particularly competitive with small native mussels such as the diminutive moccasinshells.

In developing this rule, the Service has assessed the best scientific and commercial information available regarding the past, present, and future threats faced by these seven mussels. Based upon these evaluations, the preferred action is to list the fat three-ridge, shiny-rayed pocketbook, oval pigtoe, Gulf moccasinshell, and Ochlockonee moccasinshell as endangered and the Chipola slabshell and purple bankclimber as threatened. These seven mussel species are endemic to the Apalachicola Region in southeast Alabama, southwest Georgia, and north Florida, where they occur in from one to four isolated marine river systems. The fat three-ridge, Chipola slabshell, and Ochlockonee moccasinshell are endemic to single drainages, the former two species to the Apalachicola and the latter species to the Ochlockonee river systems. The shiny-rayed pocketbook and purple bankclimber are restricted to both the Apalachicola and Ochlockonee river systems, while the oval pigtoe is found in these two rivers in addition to the Suwannee River and Econfinia Creek systems. The Gulf moccasinshell is now restricted to the Apalachicola River system and Econfinia Creek.

These species have been rendered vulnerable to extinction by significant loss of habitat and severe range restriction. The restricted distribution of these seven species also makes localized populations susceptible to catastrophic events and increased pressures from take.

Critical Habitat

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, the Secretary designate

critical habitat at the time the species is determined to be endangered or threatened. The Service finds that designation of critical habitat is not prudent for these species. Service regulations (50 CFR 424.12(a)(1)) state that designation of critical habitat is not prudent when one or both of the following situations exist—(1) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of threat to the species, or (2) such designation of critical habitat would not be beneficial to the species. Such a determination would result in no known benefit to these species, and designation of critical habitat could further increase the threat of collecting or vandalism.

Regulations promulgated for implementing section 7 provide for both a jeopardy standard, based on listing alone, and for a destruction or adverse modification standard, in cases where critical habitat has been designated. The fat three-ridge, shiny-rayed pocketbook, Gulf moccasinshell, Ochlockonee moccasinshell, oval pigtoe, Chipola slabshell, and purple bankclimber occupy very restricted stream reaches. Any significant adverse modification or destruction of their habitat would likely jeopardize their continued existence. Therefore, no additional protection for the species would accrue from critical habitat designation that would not also accrue from listing these species. If these are listed, the Service believes that protection of their habitat can be accomplished through the section 7 jeopardy standard, and through section 9 prohibitions against take.

The publication of critical habitat maps in the *Federal Register* and local newspapers and other publicity accompanying critical habitat designation could increase the harvest or collection threat and also increase the potential for vandalism during the critical habitat designation process.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the

prohibitions against taking and harm are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

Federal involvement is expected to include the EPA through the Clean Water Act's provisions for pesticide registration and waste management actions. The Corps of Engineers will consider these species in project planning and operation, and during the permit review process. The Federal Energy Regulatory Commission will consider these species prior to the relicensing of hydropower dams. The Federal Highway Administration will consider impacts of federally funded bridge and road construction projects when known habitat may be impacted. Continuing development within the Apalachicola Region may involve the Farmers Home Administration and their loan programs. The Soil Conservation Service will consider the species during project planning and under their farmer's assistance programs. The Forest Service will consider downstream impacts to habitat of the fat three-ridge and purple bankclimber when planning or implementing silvicultural, recreational, or other programs in lands adjacent the lower mainstem of the Apalachicola River, and to habitat of the purple bankclimber when planning or implementing these activities in lands adjacent the lower mainstem of the Ochlockonee River, both drainages are in the Apalachicola National Forest.

The Act and implementing regulations found at 50 CFR 17.21 for endangered species, and 17.21 and 17.31 for threatened species set forth a series of general prohibitions and exceptions that apply to all endangered

and threatened wildlife. These prohibitions, in part, make it illegal for any person subject to jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, or collect; or attempt any of these), import or export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any listed species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered or threatened wildlife species under certain circumstances. Regulations governing permits are at 50 CFR 17.22, 17.23, and 17.32. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in connection with otherwise lawful activities. For threatened species, there are also permits for zoological exhibition, educational purposes, or special purposes consistent with the purpose of the Act.

In some instances, permits may be issued for a specified time to relieve undue economic hardship that would be suffered if such relief were not available. However, since none of the species in this proposal are currently in active trade, no such permits are expected.

Public Comments Solicited

The Service intends that any final action resulting from these proposals will be as accurate and as effective as possible. Therefore, comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning these proposed rules are hereby solicited. Comments particularly are sought concerning:

- (1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to the species;
- (2) The location of any additional populations of the species and the reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;
- (3) Additional information concerning the range, distribution, and population size of the species; and
- (4) Current or planned activities in the subject areas and their possible impacts on the species.

Final promulgation of the regulations on these species will take into consideration the comments and any additional information received by the Service, and such communication may lead to final regulations that differ from this proposal.

The Act provides for a public hearing on this proposal, if requested. Requests must be received within 45 days of the date of publication of this proposal. Such requests must be made in writing and should be addressed to the Field Supervisor (see ADDRESSES section).

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the *Federal Register* on October 25, 1983 (48 FR 49244).

References Cited

A complete list of all references cited herein, as well as others, is available upon request from the Field Supervisor (see ADDRESSES section).

Author

The primary author of this proposed rule is Robert S. Butler, U.S. Fish and Wildlife Service, Jacksonville Field Office, 6620 Southpoint Drive South, Suite 310, Jacksonville, Florida 32216 (904/232-2580).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, and Transportation.

Proposed Regulation Promulgation

PART 17—[AMENDED]

Accordingly, the Service hereby proposes to amend part 17, subchapter B, chapter I, title 50 of the Code of Federal Regulations, as set forth below:

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1544; 16 U.S.C. 4201-4245; Pub. L. 99-625, 100 Stat. 3500; unless otherwise noted.

2. Section 17.11(h) is amended by adding the following, in alphabetical order under "CLAMS", to the List of Endangered and Threatened Wildlife:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
CLAMS							
Bankclimber, purple	<i>Elliptioideus sloatianus</i>	U.S.A. (AL, FL, GA)	NA	T		NA	NA
Moccasinshell, Gulf	<i>Medionidus pencillatus</i>	U.S.A. (AL, FL, GA)	NA	E		NA	NA
Moccasinshell, Ochlockonee	<i>Medionidus simpsonianus</i>	U.S.A. (FL, GA)	NA	E		NA	NA
Pigtoe, oval	<i>Pleurobema pyriforme</i>	U.S.A. (AL, FL, GA)	NA	E		NA	NA
Pocketbook, shiny-rayed	<i>Lampsilis subangulata</i>	U.S.A. (AL, FL, GA)	NA	E		NA	NA
Slabshell, Chipola	<i>Elliptio chipolaensis</i>	U.S.A. (AL, FL)	NA	T		NA	NA
Three-ridge, fat	<i>Amblema neisleri</i>	U.S.A. (FL, GA)	NA	E		NA	NA

Dated: July 19, 1994

Mollie H. Beattie

Director, Fish and Wildlife Service.

[FR Doc. 94-18923 Filed 8-2-94; 8:45 am]

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Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AC 62

Endangered and Threatened Wildlife and Plants; Proposed Rule to List the Arkansas River Basin Population of the Arkansas River Shiner as Endangered

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) proposes to list the Arkansas River basin population of the Arkansas River shiner (*Notropis girardi*) as an endangered species under the authority of the Endangered Species Act of 1973 (Act), as amended. The Arkansas River shiner is a small fish found in the Canadian (South Canadian) River in New Mexico, Oklahoma, and Texas; and the Cimarron River in Kansas and Oklahoma. A non-native, introduced population occurs in the Pecos River in New Mexico; however, protection for this population is not under consideration. The Arkansas

River basin population is threatened by habitat destruction and modification from stream dewatering or depletion due to diversion of surface water and excessive groundwater pumping, water quality degradation, and construction of impoundments. Incidental capture of the Arkansas River shiner during pursuit of commercial bait fish species, and competition with the introduced Red River shiner (*Notropis bairdi*) may also contribute to reduced population sizes. This proposal, if made final, will implement Federal protection provided by the Act for *Notropis girardi*. Critical habitat is prudent but not currently determinable.

DATES: Comments from all interested parties must be received by October 3, 1994. Public hearing requests must be received by September 19, 1994.

ADDRESSES: Comments and materials concerning this proposal should be sent to: Field Supervisor, Ecological Services Field Office, 222 South Houston, Suite A, Tulsa, Oklahoma 74127. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Ken Collins at the above address (918/581-7458).

SUPPLEMENTARY INFORMATION:

Background

The Arkansas River shiner was first discovered by A. I. Ortenburger in 1926 in the Cimarron River northwest of Kenton, Cimarron County, Oklahoma (Hubbs and Ortenburger 1929). The Arkansas River shiner is a small, robust shiner with a small, dorsally flattened head, rounded snout, and small subterminal mouth (Miller and Robison 1973, Robison and Buchanan 1985). Adults attain a maximum length of 51 millimeters (mm) (2 inches (in)). Dorsal, anal, and pelvic fins all have eight rays and there is usually a small, black chevron present at the base of the caudal fin. Dorsal coloration tends to be light tan, with silvery sides gradually grading to white on the belly. The Arkansas River shiner historically inhabited the main channels of wide, shallow, sandy-bottomed rivers and streams of the Arkansas River Basin. Adults are uncommon in quiet pools or backwaters, and almost never occur in tributaries having deep water and bottoms of mud or stone (Cross 1967).

Adults prefer to orient into the current on the "lee" sides of transverse sand ridges and feed upon organisms washed downstream (Cross 1967). Their food habits have not been recorded but their principal food items are presumed to be small aquatic invertebrates (Gilbert 1978) or plankton (Sublette *et al.* 1990). The Arkansas River shiner spawns in