

perceptions of problems or conflicts with PWC.

Comments Related to Wildlife and Wildlife Habitat

58. One commenter stated that PWC use and human activities associated with their use may not be any more disturbing to wildlife species than any other type of motorized or non-motorized watercraft. The commenter cites research by Dr. Rodgers whose studies have shown that PWC are no more likely to disturb wildlife than any other form of human interaction. PWC posed less of a disturbance than other vessel types. Dr. Rodgers' research clearly shows that there is no reason to differentiate PWC from motorized boating based on claims on wildlife disturbance.

NPS Response: The wildlife impact analysis completed for the Glen Canyon NRA considered a large body of technical information, including research findings of Dr. Rodgers, that addressed, observed and tested effects of PWC and other motorized watercraft use on various fish and wildlife species and to wildlife in general. Some of the available literature discussed effects to some wildlife species and not to other groups. Some of the available literature noted that PWC use was less or no more disruptive than other types of motorized or man-powered watercraft. A common theme in many of the research findings was that much of the wildlife effect depended on a complex of other environmental variables not just the type of watercraft. The NPS considered all these findings in conducting an objective and balanced impact analysis. The literature results were used as appropriate within the physical and ecological conditions that prevail at Glen Canyon. It was concluded in the final EIS that alternatives A and B would have negligible to minor adverse effects on wildlife and wildlife habitat from noise, high-speed operations, habitat disturbance and exposure to fuel constituents. Continued PWC operation under these alternatives would not result in an impairment of wildlife, fish, or supporting habitat resources. These conclusions regarding wildlife impacts that were based on scientific literature and based on the environmental conditions present in Glen Canyon NRA are believed to be accurate and complete.

Comments Related to Shoreline and Submerged Aquatic Vegetation

59. One commenter noted that the EIS identified the issue of potential concern that the beaching and landing of PWC could result in the trampling of

shoreline vegetation. The comment refers to several other phrases in the text that discuss the affected environment and the indistinguishable cumulative effects of PWC use and other watercraft on shoreline or submerged aquatic vegetation.

NPS Response: Shoreline vegetation has been historically subjected to many sources of disturbance since the recreation area was created. The most important has been repeated inundation and desiccation as the reservoir level rises and falls. Other sources that have affected and would continue to affect shoreline vegetation include PWC operators, other watercraft operators and passengers, general visitors and livestock in some areas. The NPS believes that the incremental effect from PWC users on shoreline vegetation conditions would be indistinguishable from other visitor-induced effects. Foot traffic from all visitor activities would occur on shorelines and lake beaches in accessible shoreline areas. Past, current and future PWC use would not produce any noticeable effect on submerged aquatic, riparian and wetland vegetation. Therefore, cumulative effects would be negligible.

Comments Related to Natural Soundscape

60. Several commenters noted that PWC were being singled out for restrictions without regard to other sources of noise, including "muscle" boats, other motorboats, loud music, parties, and illegal fireworks.

NPS Response: The Final Environmental Impact Statement and final rule were not designed to determine if PWC caused more environmental damage to park resources than other boats, but rather, to determine if PWC use was consistent with Glen Canyon National Recreation Area's enabling legislation and management goals and objectives of the park. Depending upon the results of the Final Environmental Impact Statement, the National Park Service could, as it has in this rulemaking, take action to adopt special regulations to manage PWC use at Glen Canyon, or could have chosen to discontinue PWC use. The alternatives listed were based upon the best information available. Other resource impacts and issues will be addressed through other planning documents and regulations.

61. Several commenters expressed a concern that the analysis did not address the fluctuations of sound that PWC make compared to other motorized watercraft. Specifically, the distinctive pitch variation may have different effects on humans and other species and

is more annoying or irritating than the more constant sounds associated with other boats.

NPS Response: The pitch variations associated with PWC and the noise differences between PWC and motorboats are acknowledged under the "Soundscapes" section in the "Affected Environment" chapter of the Draft and Final Environmental Impact Statements. PWC noise does fluctuate as a result of typical operation, but the noise intensity levels are not typically in violation of the National Park Service noise standard. The suggestion that pitch variations may have different effects on humans and other species, and that the variation is more annoying or irritating, was incorporated in the analysis and contributes to the "minor to moderate" adverse impact determination.

62. One commenter stated that wilderness management in the Natural Zone is ignored even though it is stated as a goal in Glen Canyon National Recreation Area's general management plan. They further state that only alternative C which bans PWC correlates satisfactorily with the values of wilderness management.

NPS Response: The noise impacts on the Natural Zone were determined to be adverse and ranged from minor to moderate within a mile of the shoreline (refer to the noise analysis in the "Soundscapes" section of the "Environmental Consequences" chapter).

The Final Environmental Impact Statement states that PWC sound impacts wilderness values of solitude and natural quiet because sound carries beyond the shoreline and is heard at some distance within the Natural Zone. The sound is heard up to a maximum of 2 miles from the source over a flat surface, but the topography surrounding Lake Powell is not flat. Assuming that a natural barrier to the sound would exist where there is an elevation change of 50 feet (approximate height of a five-story building), approximately 16,000 acres would be affected (between 3,700 feet to 3,750 feet in elevation). This equals 2.3% of the Natural Zone (668,670 acres). Time of day and season of use would also reduce the level of noise in the Natural Zone because the noise would not be continuous, would be encountered only during daylight hours, and would be minimal between October and May.

Although noise does intrude on desired wilderness and Natural Zone soundscape values, the inescapable juxtaposition of the Natural Zone and the Recreation and Resource Utilization Zone make it impossible to avoid all adverse impacts on the Natural Zone/