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Carolyn M. Chopko

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NRDC V. EVANS: NORTHERN DISTRICT OF CALIFORNIA
DELIVERS “SOUND” JUDGMENT IN PROTECTION OF
MARINE WILDLIFE UNDER THE MMPA, RESTRICTING
NAVY’S USE OF SONAR

I. INTRODUCTION

The United States Department of the Navy’s (Navy) Surveillance Towed Array Sensor System (SURTASS) Low Frequency Active Sonar (LFA) is a new form of sonar, designed to aid in the development and testing of new naval warfare technologies.¹ The mission of SURTASS LFA is to detect increasingly quiet enemy submarines in a timely manner.² In carrying out this mission, the new technology sends out intense sonar pulses at low frequencies that travel hundreds of miles.³

Despite the anticipated success of LFA sonar in enhancing national security, many environmentalists claim that this low frequency sonar will have devastating effects on marine wildlife species.⁴ Specifically, environmentalists are concerned about the long-

1. See *Natural Res. Def. Council v. Evans*, 279 F. Supp. 2d 1129, 1137 (N.D. Cal. 2003). See also, Paul C. Kiamos, *National Security and Wildlife Protection: Maintaining an Effective Balance*, 8 ENVTL. LAW 457, 486 (June 2002) (noting that both Russian and French navies already employ LFA sonar system); *Department of the Navy SURTASS LFA Systems Description*, at <http://www.surtass-lfa-eis.com/Description/index.htm> (explaining purpose and operation of SURTASS LFA) [hereinafter SURTASS LFA Website].

2. See generally SURTASS LFA Website, *supra* note 1. For further discussion of SURTASS LFA see *infra* notes 31-42 and accompanying text.

3. *Id.* (discussing history and unsecured operational details of SURTASS LFA sonar).

4. See generally Elena M. McCarthy, *International Regulation of Transboundary Pollutants: The Emerging Challenge of Ocean Noise*, 6 OCEAN & COASTAL L.J. 257 (2001) (discussing impacts of ocean noise on health of marine mammals and attempts to regulate noise). Marine mammals are “insonified” when exposed to underwater sonar because underwater noise creates interference with the animals’ “ecolocating sonars” which they rely on to communicate and navigate. *Id.* at 269. Powerful sound may “cause tissue in the lungs, ears, or other body parts to rupture or hemorrhage.” *Id.* at 269-70. Furthermore, “[m]ammals’ reaction to sound can range from brief interruptions of normal activities, such as feeding, to short- or long-term displacement from noisy areas.” *Id.* at 270. See also Margot Higgins, *Alarm Sounds Over U.S. Navy Sonar Program*, ENVIRONMENTAL NEWS NETWORK, (Apr. 6, 2001) available at <http://www.enn.com.extras/printer-friendly.asp?storyid=42879> (highlighting claims of environmental groups that Navy failed to address affects of sonar system on long-term health and behavior of whales, dolphins and hundreds of other marine species); Kenneth Weiss, *U.S. Navy’s Sonar is Danger to Sea Life*, *Judge Rules*, L.A. TIMES, (Aug. 28, 2003), available at <http://www.smh.com.au/articles/2003/08/27/1061663853625.html> (noting findings of scientists who discovered in-

term effects of LFA sonar on the health and behavior of whales, dolphins and hundreds of other marine species.⁵ Marine mammals depend on their sensitive hearing for needs such as following migratory routes, locating each other over distances, finding food and caring for their young.⁶ Loud noises, particularly those lasting in duration, interfere with the animals' hearing, which in turn threatens their ability to function and survive.⁷

Maintaining national security is of particular importance today, especially given the need for increased vigilance following the tragic events of September 11, 2001.⁸ Military preparedness, including protection against enemy submarine attacks, is an essential element of maintaining a comprehensive national security system.⁹ There is no doubt, however, that protecting the world's ocean and sea creatures, dependent on the ocean environment for survival, is of equally great importance.¹⁰ To prevent harm to military readiness and to ensure that military training complies with substantive

tense sound can tear delicate air-filled tissues around mammals' brains and ears, resulting in hemorrhaging and death); Natural Resources Defense Council, *Navy Sonar System Threatens Whales*, NRDC Website, (Sept. 25, 2003) available at <http://www.nrdc.org/wildlife/marine/nlfa.asp> (comparing noise generated by Navy's new sonar technology to sound level of "Times Square at rush hour.") [hereinafter NRDC Website].

5. See NRDC Website, *supra* note 4 (asserting inadequacy of Navy's environmental impact statement and failure to address long-term effects of LFA sonar on marine mammals).

6. *Id.* (explaining marine mammals' reliance upon hearing).

7. *Id.* (explaining effect of noise on marine mammals); see also McCarthy, *supra* note 4 at 269-70 (explaining effect of noise on marine mammals).

8. See Dan Meyer and Everett E. Volk, "W" for War and Wedge? *Environmental Enforcement and the Sacrifice of American Security — National and Environmental — To Complete the Emergence of a New "Beltway" Governing Elite*, 25 W. NEW ENG. L. REV. 41 (2003) (discussing national security measures and consequential impact on environment). The authors address concerns regarding potential expansion of military operations and its impact on the environment. Specifically, the authors note the statement of Vice Adm. James Amerault, Deputy Chief of Naval Operations in a March 2003 Senate hearing:

While our naval forces may have decreased in number, our requirement for ranges have not. Today's higher performance aircraft and ships employ weapons of greater capability, but also of greater complexity and unique delivery tactics. The combination of capability, complexity and tactics also translates into the need for larger ranges.

Id. at 54; see generally, Paul C. Kiamos, *supra* note 1.

9. Meyer, *supra* note 8 at 42-48 (discussing national defense preparedness in light of existing environmental legislation).

10. See *Natural Res. Def. Council v. Evans*, 279 F. Supp. 2d 1129, 1138-39 (N.D. Cal. 2003) (discussing need to balance concerns of Navy and environmental groups).

requirements of environmental legislation, a careful balance must be maintained.¹¹

This Note examines the Northern District of California's review of the Navy's SURTASS LFA program and its compliance with environmental laws employed to protect marine wildlife in *Natural Resources Defense Council v. Evans*.¹² In particular, the court in *Evans* examined the program's compliance with the Marine Mammal Protection Act (MMPA), National Environmental Policy Act (NEPA) and the Endangered Species Act (ESA).¹³ Section II of this Note presents the facts of *Evans*.¹⁴ Section III of this Note examines the applicability and effects of the Navy's implementation and use of new low frequency sonar on the environment, especially marine mammal wildlife, in light of existing environmental legislation.¹⁵ Section IV discusses the Northern District of California's rationale for issuing an injunction, restricting the Navy's peacetime use of the low frequency sonar in *Evans*.¹⁶ Section V analyzes the Northern District of California's decision in light of existing precedent, and offers possible solutions to better maintain an adequate balance between national defense concerns and environmental protection concerns.¹⁷ Finally, Section VI concludes with an assessment of the impact the District Court's decision will have on the balance between protecting marine wildlife and maintaining national security.¹⁸

II. FACTS

In late 2002, plaintiffs, various environmental groups (Natural Resources Defense Council or NRDC),¹⁹ sought a permanent in-

11. See Kiamos, *supra* note 1, at 461-62 (acknowledging importance of maintaining balance between environmental protection and Navy training).

12. See generally, *Evans*, 279 F. Supp. 2d at 1129 (reviewing Navy's use of SURTASS LFA sonar and compliance with environmental laws).

13. See *id.* at 1141-88 (discussing impact of environmental legislation on Navy training).

14. For a discussion of the facts of *Evans*, see *infra* notes 19-30 and accompanying text.

15. For a discussion of the applicability and effects of Navy training on the environment in light of existing environmental legislation, see *infra* notes 154-57 and accompanying text.

16. For a discussion of the court's analysis in *Evans*, see *infra* notes 87-125 and accompanying text.

17. For a critical analysis of the district court's decision, see *infra* notes 126-50 and accompanying text.

18. For a discussion of the impact of the district court's decision, see *infra* notes 151-57 and accompanying text.

19. *Evans*, 279 F. Supp. 2d at 1129. Included amongst the plaintiffs in *Evans* was also "a concerned individual." *Id.*

junction against federal officials to prevent the United States Navy's peacetime use of a low frequency sonar system, LFA, for training, testing and routine operations.²⁰ NRDC charged that the Navy's unrestricted use of the new sonar would result in irreparable injury by harassing, injuring and killing marine mammals and other sea creatures with sensitive hearing.²¹ NRDC further noted that many of the animals affected by the Navy's use of LFA are already endangered, including whales, dolphins, seals, turtles and salmon.²²

NRDC raised two main issues.²³ First, it claimed that the National Marine Fisheries Service (NMFS) improperly approved the Navy's use of the new sonar in as much as seventy-five percent of the world's oceans in violation of the MMPA, the ESA and the Administrative Procedure Act (APA).²⁴ Second, NRDC claimed that the Navy issued an inadequate Environmental Impact Statement (EIS), which violated the NEPA.²⁵ In response, the Navy argued that it had fully complied with all applicable laws.²⁶ The Navy further argued that enjoining the peacetime use of LFA sonar would harm national security because training and testing is necessary for military readiness.²⁷

The court granted NRDC's motion for a preliminary injunction on October 31, 2002.²⁸ Both parties filed cross-motions for summary judgment on April 15, 2003.²⁹ On June 30, 2003, the court heard the parties' cross-motions for summary judgment.³⁰

20. See *id.* at 1137-38 (discussing procedural history of case).

21. See *id.* For further discussion of the plaintiff's claims regarding irreparable injury to marine mammals, see *infra* notes 21-25 and accompanying text.

22. See *id.* at 1139. The district court observed that "the populations of many of these creatures, once abundant, have shrunk, and some are on the verge of extinction." *Id.*

23. For a discussion of the two issues raised by NRDC, see *infra* notes 24-25 and accompanying text.

24. *Evans*, 279 F. Supp. 2d at 1140-41. NMFS and the Navy have an arms-length regulatory relationship for the purpose of ensuring enforcement and compliance with federal environmental laws. See *id.* Together, the two agencies prepared the "Final Rule," as required by federal law, to ensure compliance with environmental legislation during military operations. *Id.*

25. See *id.* at 1164-75 (addressing NRDC's complaint that Navy violated NEPA based on inadequate environmental impact statement).

26. *Id.* at 1138 (noting defenses to NRDC's allegations that Navy violated various environmental laws).

27. *Id.* (discussing Navy's defense to plaintiffs' alleged environmental legislation violations).

28. *Id.* (discussing request for preliminary injunction).

29. *Evans*, 279 F. Supp. 2d at 1138 (discussing requests for summary judgment).

30. For a discussion of the court's analysis, see *infra* notes 87-125 and accompanying text.

III. BACKGROUND

A. SURTASS LFA

Anti-Submarine Warfare (ASW) is an essential component of the Navy's defense mission.³¹ The Navy began developing SURTASS LFA in 1985 to supplement the ASW mission and enable the United States to better detect a new generation of quieter Soviet submarines.³²

The SURTASS portion of the system is a low frequency passive surveillance system that is deployed on surface ships and is capable of collecting and analyzing acoustic data.³³ The LFA portion of the system consists of a series of acoustic transmitters placed on a cable below a surface ship.³⁴ The LFA functions by using transmitters to send out "pings" which bounce off underwater objects and then echo back to the operator.³⁵ The system's operation has been described as having the ability to "light up" enemy submarines with acoustics, similar to the way a floodlight can illuminate an intruder in a dark backyard.³⁶

Since the Navy first began sea trials for SURTASS LFA in the 1990s, the military threat has shifted to new concerns regarding the growing submarine fleets of "non-allied" nations such as the Russian Federation, the People's Republic of China, Iran and North Korea.³⁷ The Navy reports that there are currently two hundred and twenty-four submarines operated by these "non-allied" nations,

31. See SURTASS LFA Website, *supra* note 1 (explaining purpose and operation of SURTASS LFA).

32. See generally Teresa B. Salamone and James L. Noles, Jr., *Judge Enjoins Testing of Naval Surveillance Technology*, 18 NAT. RESOURCES & ENV'T 31 (2003) (discussing background development of SURTASS LFA). The reported cost of the program was "more than \$300 million." *Id.* at 31.

33. See SURTASS LFA Website, *supra* note 1 (explaining unclassified purpose and operation of SURTASS LFA).

34. See *id.* (explaining that LFA system is used when target is "too quiet to be detected by passive SURTASS system alone.").

35. See *id.* (comparing underwater sound pulse or "ping" to manner of stereo speakers turning electrical impulses into sound waves in air).

36. Weiss, *supra* note 4 (describing far-reaching capabilities of SURTASS LFA sonar).

37. See Salamone, *supra* note 32, at 57 (discussing military preparedness concerns). See also Robert McClure, *Tests on Marine Mammals to Look for Sonar Link to Injuries*, SEATTLE POST-INTELLIGENCER (July 12, 2003), available at http://seattlepi.nwsourc.com/local/130609_sonar12.html. The author quotes Rear Adm. Robert Moeller in congressional testimony regarding use of new sonar: "[n]ew ultra-quiet diesel-electric submarines armed with deadly torpedoes and cruise missiles are proliferating widely." *Id.*

many of which are “quieter and more deadly than ever before.”³⁸ According to the Navy, undetected submarines are equivalent to an underwater terrorist and have the ability to threaten not only surface ships, but America’s shores as well.³⁹

Recognizing the need to comply with existing environmental legislation, the Navy has spent over sixteen million dollars conducting scientific research regarding the sonar system’s effect on the environment.⁴⁰ As a result of such extensive research, the Navy established an independent scientific working group, responsible for recommending research priorities.⁴¹ In addition, the Navy reports that it conducted quantitative modeling of animal movements and acoustical exposure, as well as the employment of on-going monitoring and mitigation programs, to minimize the risk of harm to marine mammals from the new sonar.⁴²

B. Marine Mammal Protection Act

Congress enacted the MMPA in 1972 to “promote conservation of ocean-dwelling mammals.”⁴³ The MMPA prohibits the taking of marine mammals with certain statutory exceptions.⁴⁴

The term “take” is defined broadly under the MMPA to mean “harass, hunt, capture, or kill,” or attempt to do any of the preceding acts.⁴⁵ Negligently operating an aircraft or a vessel is also an activity encompassed by the MMPA’s “take” definition.⁴⁶

The term “harassment” under the MMPA means “any act of pursuit, torment, or annoyance” that “has the potential to injure a marine mammal,” or that “has the potential to disturb a marine

38. See SURTASS LFA Website, *supra* note 1 (explaining need to detect new submarines at long-range to ensure adequate reaction time).

39. See *id.* (explaining that only low frequency active sonar provides long-range submarine detection capability that Navy needs). The Website explains that “[t]he Navy Fleet Commanders in Chief (CINCs) have determined that SURTASS LFA sonar is a crucial element of the Navy’s anti-submarine warfare force and is an asset required for our national security.” *Id.*

40. See *id.* (noting that Navy developed Environmental Impact Statement in addition to “state-of-the-art marine mammal mitigation system.”); see generally Margaret M. Carlson, *Environmental Diplomacy: Analyzing Why the U.S. Navy Still Falls Short Overseas*, 47 NAVAL L. REV. 62 (2000) (discussing military’s requirements and attempts to comply with environmental protection laws).

41. See SURTASS LFA Website, *supra* note 1 (noting establishment of independent scientific working group).

42. See *id.* (explaining additional steps Navy is taking to protect marine life).

43. Kiamos, *supra* note 1, at 462-63 (explaining overview of MMPA).

44. See 16 U.S.C. § 1371(a) (2000) (listing exceptions for takings).

45. 16 U.S.C. § 1362(13) (2000) (defining term “take”).

46. See Kiamos, *supra* note 1, at 464 (citing 50 C.F.R. § 216.3 (2001)).

mammal” by disrupting its behavioral patterns.⁴⁷ Harassment that has the potential to injure a marine mammal is level “A” harassment.⁴⁸ Harassment that will merely disturb a marine mammal by disrupting behavioral patterns is level “B” harassment.⁴⁹ The distinction between level “A” and “B” harassment is material because it indicates the type of authorization required for incidental takings.⁵⁰

Several categories of activities are excluded from application of the MMPA.⁵¹ For example, the MMPA allows American Indians, Aleuts and Eskimos to take marine mammals for subsistence purposes or to make or sell native craft articles.⁵² In addition, the MMPA permits the taking of a marine mammal as a means of self-defense.⁵³ Finally, the MMPA provides an exception for situations where it is imminently necessary to deter a marine mammal from damaging fishing gear or catch.⁵⁴

The Secretaries of Commerce and the Interior may waive the restriction on takings under the MMPA if, on the basis of scientific evidence, they determine that the taking will be consistent with principles of resource protection and conservation.⁵⁵ The Secretaries, however, rarely use this waiver provision and cannot use it if it will result in the taking of affected species which are below “optimum sustainable population levels.”⁵⁶

The MMPA authorizes the Secretary to allow for “incidental takes” where proposed activities may result in the unintentional taking of small numbers of marine mammals.⁵⁷ To approve an “inci-

47. 16 U.S.C. § 1362(18)(A) (2000); *see also* 50 C.F.R. § 216.3 (2001) (dividing harassment into two levels). “Level A harassment” means an act of pursuit, torment or annoyance having the potential to injure a marine mammal. *Id.* “Level B harassment” means an act of pursuit, torment or annoyance, which has the potential to disturb a marine mammal in the wild by causing disruption of behavioral patterns. *Id.*

48. Kiamos, *supra* note 1, at 465 (explaining distinctions between Level A harassment and Level B harassment).

49. *Id.* (describing “Level B” harassment).

50. *See id.* (explaining that types of authorizations required for incidental takings are different for Level A and Level B harassment).

51. *Id.* at 466 (discussing various activities to which MMPA taking provisions do not apply).

52. *See id.* (citing 16 U.S.C. § 1371(b) (2000)).

53. *See* Kiamos, *supra* note 1, at 466 (citing 16 U.S.C. § 1371(c) (2000) (providing for self-defense exception)).

54. *Id.* (citing 16 U.S.C. § 1371(a)(4)(A) (2000)).

55. *Id.* (citing 16 U.S.C. § 1371(a)(3)(A) (2000)).

56. *Id.* (citing 16 U.S.C. § 1371(a)(3)(B) (2000)) (discussing infrequent use of waiver provision).

57. *Id.* at 467-70 (citing 16 U.S.C. § 1371(a)(5)(A) (2000)) (discussing “incidental take” provision)).

dental take,” the Secretary must conclude that there will be a “negligible impact” on the affected species.⁵⁸ In planning and implementing training exercises, determining whether an agency is allowed to “take” is subject to an arbitrary and capricious review standard under the APA.⁵⁹

Although the MMPA does not provide for automatic exemptions for national security matters, Naval training exercises may be exempt from complying with MMPA regulations under a “necessity defense” when circumstances make it impossible for the Navy to comply with the law.⁶⁰ To successfully assert a “necessity defense” under the MMPA, a crisis must exist where a commander is forced to choose between violating the MMPA (potentially harming or taking a marine mammal) and taking no action (producing a greater harm to national security).⁶¹

C. Judicial Interpretation of the MMPA

1. *Strahan v. Linnon*

Several courts have considered the application of the MMPA to federal agency actions and have held that a permit is required if the agency’s actions may result in the taking of a marine mammal.⁶² In *Strahan v. Linnon*, the court held that the U.S. Coast Guard was required to apply for a small take permit if it anticipated taking a marine mammal during the course of its operations.⁶³ In *Strahan*, plaintiffs filed citizen suits alleging that the Coast Guard failed to comply with NEPA, the ESA and the MMPA after evidence showed

58. See Kiamos, *supra* note 1, at 467-70 (discussing standards for “incidental takes”).

59. See generally 5 U.S.C. § 706(2)(A) (2000) (noting standard of review).

60. See Kiamos, *supra* note 1, at 479 (discussing incidental harassment authorizations).

61. See *id.* (explaining instances where Naval training exercises may potentially be excused from MMPA compliance). See also John Alan Cohan, *Modes of Warfare and Evolving Standards of Environmental Protection Under the International Law of War*, 15 FLA. J. INT’L. L. 481, 482-85 (2003) (discussing military operations and effect on environment). The U.S. Navy Commander’s Handbook on the Law of Naval Operations addresses the protection of the environment during times of conflict. *Id.* at 534. “It is not unlawful to cause collateral damage to the natural environment during an attack upon a legitimate military objective. However, the commander has an affirmative obligation to avoid unnecessary damage to the environment to the extent that it is practicable to do so consistent with mission accomplishment.” *Id.* at 534-35.

62. See Kiamos, *supra* note 1, at 473-78 (reviewing judicial interpretation of MMPA application to federal agency actions).

63. See *Strahan v. Linnon*, 967 F. Supp. 581, 627 (D. Mass. 1995) (holding agency required to obtain small take permit for potential takes during procedural operations).

that the Coast Guard had struck and killed two Northern Right whales with a watercraft.⁶⁴ The Coast Guard had not prepared any form of environmental compliance documentation for operations in the area where the whales were struck and killed.⁶⁵

The court noted that the Coast Guard failed to apply for a MMPA permit.⁶⁶ Consequently, the court issued a preliminary injunction, ordering the Coast Guard to apply for a permit “for all Coast Guard operations that may accidentally ‘take’ a Northern Right whale regardless of whether defendants consider the possible taking unlikely.”⁶⁷

2. *United States v. Hayashi*

Courts have generally interpreted the MMPA’s “harassment” criteria to require more than a temporary, non-injurious alteration of marine mammal behavior.⁶⁸ For example, in *United States v. Hayashi*, a fisherman was charged with violating the MMPA when he fired shots near porpoises to distract them from eating bait on his fishing line.⁶⁹ Initially, the fisherman was convicted of knowingly taking a marine mammal because he had harassed or attempted to harass the porpoises by shooting near them.⁷⁰

The Ninth Circuit reversed the fisherman’s conviction, however, holding that “reasonable actions . . . not resulting in severe, sustained disruption of the mammal’s normal routine . . . [of] eating fish or bait off a fishing line are not rendered criminal by the MMPA or its regulations.”⁷¹ Because the fisherman’s actions did not amount to a substantial disruption of the mammal’s routine, the court determined that his acts did not qualify as harassment under the MMPA.⁷²

64. *Id.* at 610 (noting that Right whales are most endangered species of large whales). Evidence of the killing of the two whales was undisputed. *Id.* at 611-12.

65. *Id.* at 612 (discussing failure of Coast Guard to have completed small take application).

66. *Id.* at 632 (discussing rigid standard of MMPA requirements).

67. *Id.* (issuing preliminary injunction requiring Coast Guard to apply for permit).

68. For a discussion of courts’ interpretation of MMPA’s “harassment” criteria, see *infra* notes 69-81 and accompanying text.

69. See *United States v. Hayashi*, 5 F.3d 1278, 1279 (9th Cir. 1993) (holding no violation of MMPA because there was no sustained disruption of marine mammals’ routine).

70. *Id.* (discussing findings of lower court).

71. *Id.* at 1284 (reversing lower court’s opinion and concluding that insufficient evidence supported defendant’s position).

72. *Id.* (demonstrating limitations of MMPA).

3. *Tepley v. National Oceanic & Atmospheric Administration*

Another case where “harassment” under the MMPA was at issue involved charges against an underwater photographer in *Tepley v. National Oceanic & Atmospheric Administration*.⁷³ In *Tepley*, a photographer and his friend approached a group of whales while traveling in their boat.⁷⁴ As the animals meandered around the boat, the photographer’s friend entered the water to touch the whales.⁷⁵ One of the whales suddenly grabbed the friend and pulled her underwater while the photographer captured the incident on his video recorder.⁷⁶ Upon learning of the incident, the National Oceanic and Atmospheric Administration (NOAA) filed charges against both individuals, asserting that they had harassed the whales and annoyed them with the sound of the video camera.⁷⁷

The court in *Tepley* applied the standard established by the Ninth Circuit in *Hayashi*: “harassment” under the MMPA had to involve a direct, serious disruption of a marine mammal’s customary habits.⁷⁸ The court determined that there was no evidence to support the assertion that the boat caused erratic behavior in the mammals in any way.⁷⁹ Furthermore, the court pointed out that merely chasing the whales, but not causing them to flee, did not constitute harassment.⁸⁰ Finally, the court held that even if the camera made some noise, such slight noise alone would not be sufficient to constitute harassment under the MMPA, as defined in *Hayashi*.⁸¹

D. Agency Interpretation of the MMPA

In addition to judicial interpretation of the MMPA, the NMFS has issued several statements indicating its supervisory control over harassment of marine mammals.⁸² Such supervisory control is evi-

73. See *Tepley v. Nat’l. Oceanic & Atmospheric Admin.*, 908 F. Supp. 708 (N.D. Cal. 1995) (refusing to find “taking” by “harassment” where photographer recorded video of whale dragging friend underwater).

74. *Id.* at 709 (discussing facts of case and explaining incident began when photographer’s friend began gently touching whale).

75. *Id.* (discussing facts of case).

76. *Id.* (noting video recordings captured by photographer were later broadcast on national television).

77. *Id.* (discussing allegations raised by NOAA and noting defendant was not charged with injuring whale in any way).

78. *Tepley*, 908 F. Supp. at 710 (citing *United States v. Hayashi*, 22 F.3d 859, 864 (9th Cir. 1993)).

79. *Id.* at 711 (concluding that there was no “substantial disruption”).

80. *Id.* at 712 (interpreting “harassment” under MMPA).

81. *Id.* (discussing degree of “harassment” required to show MMPA violation).

82. See Kiamos, *supra* note 1, at 478 (noting applicability to and close scrutiny of military training).

denced by the NMFS's incidental harassment authorizations.⁸³ For example, the NMFS provided incidental harassment authorizations for missiles launched from Vandenberg Air Force Base because the launches may have resulted in a temporary reduction in the number of seals on the beach.⁸⁴ In addition, the NMFS authorized the noise from helicopters flying over ice in Alaska under the MMPA because the noise affected seals.⁸⁵ Finally, the NMFS has allowed for incidental harassment to occur where marine mammals in the vicinity of a seismic source reacted to the sounds generated or the visual cues.⁸⁶

IV. NARRATIVE ANALYSIS

In *Natural Resources Defense Council v. Evans*, the Northern District of California issued an injunction limiting the Navy's use of low frequency sonar in an attempt to protect both military preparedness and marine wildlife.⁸⁷ In its analysis, the court focused on several prominent environmental legislative acts, including the MMPA.⁸⁸

A. MMPA Analysis

The court in *Evans* determined that the Navy's plans to employ the new sonar did not comport with the MMPA in respect to several key elements of the statute.⁸⁹ In its analysis, the court considered five alleged violations of the MMPA resulting from an inadequate

83. *Id.* (noting supervisory control regarding incidental take authorizations).

84. *Id.* (citing *Small Takes of Marine Mammals Incidental to Specified Activities; Lockheed Launch Vehicles at Vandenberg Air Force Base, Ca.*, 62 Fed. Reg. 26,779, 26,779-80 (May 15, 1997)).

85. *Id.* (citing *Small Takes of Marine Mammals Incidental to Specified Activities; Oil and Gas Exploration Drilling Activities in the Beaufort Sea*, 62 Fed. Reg. 37,881, 37,883 (July 15, 1997)).

86. *Id.* at 479 (citing *Small Takes of Marine Mammals Incidental to Specified Activities; Offshore Seismic Activities in the Beaufort Sea*, 62 Fed. Reg. 19,553, 19,554 (Apr. 22, 1997)).

87. *See Natural Res. Def. Council v. Evans*, 279 F. Supp. 2d 1129 (N.D. Cal. 2003) (granting in part and denying in part both parties motions for summary judgment). The order did not preclude the Navy from using the low frequency sonar during wartime, and acknowledged that the Navy must be allowed to train with it beforehand in various oceanic conditions and under prescribed circumstances. *Id.* at 1139.

88. For a discussion of the court's MMPA analysis, see *infra* notes 89-125 and accompanying text.

89. *See Natural Res. Def. Council v. Evans*, 279 F. Supp. 2d 1129, 1141-64 (N.D. Cal. 2003) (discussing Navy's compliance with MMPA requirements).

Final Rule for the implementation of the LFA sonar issued by NMFS.⁹⁰

1. Specified Geographical Region

The court determined that in order to comply with the MMPA, the Final Rule “must authorize the Navy to operate in only a limited number of geographical regions at any given time.”⁹¹ NRDC alleged that the biomes and provinces identified by NMFS were too large.⁹² Specifically, they asserted that such a vast area would be inappropriate as a specified geographic region and, as such, violated the MMPA.⁹³

The Navy argued that, under the MMPA, there is no requirement that the specified regions be small, as long as the regions are not any larger than necessary “to accomplish the specified activity.”⁹⁴ Moreover, the Navy argued that large areas were needed for an LFA sonar mission to remain within one, or at most two, specified geographic regions.⁹⁵

The court concluded that even though the SURTASS LFA system called for a large geographic area in order to operate, it was particularly troublesome that the geographical regions chosen by NMFS and the Navy “undisputedly did not have homogeneous ecological or biogeographical characteristics.”⁹⁶ According to the court, the Final Rule was erroneous because it did not preclude the Navy from applying to proceed in all fifty-four provinces in a given

90. For a discussion of the district court’s analysis of the five alleged MMPA violations, see *infra* notes 91-125 and accompanying text.

91. *Evans*, 279 F. Supp. 2d at 1142-47 (concluding that Navy had failed to indicate in Final Rule that it would limit operations to specified geographic location as required by MMPA).

92. *Id.* at 1142. The Navy’s Final Rule authorized incidental takings by Level A and Level B harassment of particular marine mammals in fifteen different biomes. *Id.*

93. *Id.* (noting plaintiff’s reference to “specific geographical region” at 16 U.S.C. § 1371(a)(5)(A)).

94. *Id.* at 1142-47 (discussing Navy’s argument regarding specified geographic locations).

95. *Id.* at 1144-45. The Navy contended that fairly large areas are needed to operate LFA sonar within a geographic region. *Id.* The Navy pointed out that because LFA sonar bounces from the ocean bottom to the surface and back again, small geographic regions would be “functionally inappropriate.” *Id.* See also SURTASS LFA Website, *supra* note 1 (discussing operation of SURTASS LFA sonar).

96. *Evans*, 279 F. Supp. 2d at 1145-47 (noting that because Navy’s Final Rule contained no limit on how many provinces would be involved in any operation of LFA sonar, no specific geographical limitations were established).

year, nor did it preclude NMFS from authorizing the deployment of LFA worldwide.⁹⁷

Even though the Navy had not indicated that it would ever attempt to operate in all fifty-four provinces, because it was currently not capable of doing so, the court held that the Final Report was in error because it failed to limit the take of marine mammals to a “specified geographic region.”⁹⁸ Accordingly, the District Court granted NRDC’s motion for summary judgment regarding the Navy’s authorization to operate in only a limited number of geographical regions at any given time.⁹⁹

2. *Small Numbers Provision*

Next, the District Court held that NMFS violated the small numbers provision of the MMPA because it used an erroneous definition of “small numbers” which did not comport with the Act.¹⁰⁰ The court explained that even though the defendants could reasonably interpret the meaning of “small numbers,” they could not ignore the statutory requirement for permits where a potential permittee must show that the taking will “[be] small and have a negligible impact on the affected species.”¹⁰¹ According to the court, the “small numbers” and the “negligible impact” requirements needed to be defined so that each term had its own meaning.¹⁰²

3. *The Final Rule’s Definition of “Harassment”*

NRDC next argued that the Navy’s Final Rule used an illegal definition of “harassment.”¹⁰³ Specifically, NRDC pointed out that the Final Rule used a different definition for “Level B harassment” than that set forth in the statute.¹⁰⁴ According to NRDC, the Navy’s

97. *Id.* (discussing potential impact of inadequate Final Rule).

98. *Id.* at 1147 (discussing compliance with specified geographic location criteria under MMPA).

99. *Id.* (granting NRDC’s motion for summary judgment regarding extent of geographical regions).

100. *See generally id.* at 1147-53 (discussing “small numbers” requirements under MMPA).

101. *Evans*, 279 F. Supp. 2d at 1152 (holding that definition of “small numbers” allowing taking of up to 12% of species violates Congressional intent).

102. *Id.* at 1153 (concluding Navy’s definition was erroneous because it combined two elements of test into single standard). Consequently, the court ruled that the Navy’s interpretation was “arbitrary and capricious” under the APA. *Id.*

103. *See generally id.* at 1153-58 (discussing Final Rule’s definition of “harassment”).

104. *Id.* at 1153 (noting plaintiffs’ claim). The Navy’s Final Rule states: “For Level B incidental harassment takings, NMFS will determine whether takings by harassment are occurring based on whether there is a significant behavioral

alleged alteration of "harassment" changed the statutory definition in two key respects: (1) it required that there be an actual disruption of behavioral patterns and not just a potential for disruption as required by the statute; and (2) it required that the disruption be significant, even though the statute contained no such limitation.¹⁰⁵

After a careful analysis of the language of the MMPA, the court determined that the Navy had complied with the statutory requirements in creating the Final Rule.¹⁰⁶ The court first pointed out that the Navy had considered potential harassment at length in formulating the Final Rule.¹⁰⁷ Even though NMFS may have used an erroneous definition of "harassment" under the MMPA in the Final Rule, the court indicated that such an erroneous definition did not appear to have caused any harm.¹⁰⁸

Next, the District Court determined that NMFS had not acted outside of its scope of discretion by interpreting the statutory language "disruption" to require a significant change.¹⁰⁹ According to the court, NMFS' interpretation of the statutory language "disruption of behavior patterns" could appropriately be paraphrased as "a significant behavioral change in a biologically important behavior activity."¹¹⁰ It was apparent to the court that the two standards were similar in meaning.¹¹¹ Accordingly, the court denied NRDC's motion for summary judgment on the issue of whether NMFS applied

change in a biologically important activity, such as feeding, breeding, migration or sheltering." *Id.* The Final Rule also provides: "Level B harassment taking occurs if the marine mammal has a significant behavioral response in a biologically important behavior or activity." *Id.* (citing 67 Fed. Reg. 46,740).

105. *Id.* at 1154 (noting plaintiffs' major arguments against Navy's "harassment" definition in Final Rule).

106. *Evans*, 279 F. Supp. 2d at 1154-58 (comparing Navy's and NRDC's arguments regarding definitions of "potential to disturb," "significance requirement," and "impact on individual mammals").

107. *Id.* at 1157 (discussing impact on single animal versus impact on all animals standards) (citing 67 Fed. Reg. 46,780).

108. *Id.* at 1158 (noting proven lack of harm to animals from LFA). The *Evans* court noted that NMFS acted arbitrarily and capriciously in failing to abide by Congress' express definition of harassment in the MMPA; however, the plaintiffs had not shown any injury. *Id.*

109. *Id.* at 1155-56 (discussing discretion of NMFS to interpret terminology used in Final Rule).

110. *Id.* (noting analogous meaning of "disruption of behavior patterns" and "significant behavioral change in a biologically important behavior activity," despite different choice of words).

111. *Evans*, 279 F. Supp. 2d at 1156-57 (noting no significant difference in word meaning).

the wrong standard for Level B harassment in preparing the Final Rule.¹¹²

4. *Negligible Impact*

With regard to the “negligible impact” requirement under the MMPA, NRDC argued that the Navy’s plan to deploy LFA sonar in a vast portion of the Pacific Ocean did not constitute a “merely negligible impact.”¹¹³ The Navy responded, however, that the “taking” would be capped at a particular percentage, and that the likely impact would be far less because they would generally avoid operating in coastal areas, where concentrations of marine mammals are highest, and because they would employ mitigation measures.¹¹⁴

The court agreed with NRDC and held that, without more restrictions on deployment of LFA sonar in sensitive areas and during sensitive periods, there could be occasions where the impact on particular populations is not “merely negligible.”¹¹⁵ Therefore, the court noted that enhancing the required mitigation measures was necessary to ensure “negligible impact.”¹¹⁶

5. *Mitigation and Monitoring*

Finally, the court addressed the monitoring and reporting requirement of “takes” under the MMPA.¹¹⁷ Although in the Final Rule NMFS proposed several measures designed to limit the harm to marine mammals, the court ultimately concluded that these proposals were insufficient under the requirements of the MMPA.¹¹⁸

112. *Id.* at 1157 (denying plaintiff’s summary judgment motion on issue of appropriate “harassment” definition).

113. *Id.* at 1158-59 (discussing plaintiff’s argument regarding negligible impact requirement under MMPA).

114. *Id.* at 1158 (discussing Navy’s planned mitigation efforts); *but see id.* at 1158 (pointing out that at same time, Navy expressed need to continue to train in coastal waters).

115. *Id.* at 1159 (pointing out that under Navy’s Final Rule, harassment by LFA sonar of up to 12% of very small populations could be detrimental).

116. *Evans*, 279 F. Supp. 2d at 1159 (noting need to continue monitoring). The *Evans* court also noted that if the annual take authorized by each year’s LOA is exceeded and is not limited to harassment but involves actual injury and death, the negligible impact finding must be revisited. *Id.*

117. *See id.* at 1159-64 (explaining that Congress imposed stringent standard regarding mitigation and monitoring); *see also* 16 U.S.C. § 1371(a)(5)(A) (2000) (stating that under mitigation and monitoring requirements of MMPA, agencies must adopt measures to ensure “least practicable adverse impact” on marine mammals).

118. *See Evans*, 279 F. Supp. 2d at 1164 (listing Final Rule proposals). The Final Rule proposals included: (1) a 2 kilometer (1.2 nautical miles) exclusion zone around LFA source where operations would be shut down if marine mammals or sea turtles were detected; (2) excluding as “off limits” coastal areas within

NRDC argued that the Navy's mitigation proposals were insufficient to achieve "the least practicable adverse impact," and that NMFS "arbitrarily failed to adopt additional, more stringent measures."¹¹⁹ The Navy and NMFS contended, however, that the measures the Navy chose were within its discretion and other measures would be unnecessary and impractical.¹²⁰

Although the court commended the Navy's attempts at establishing an "exclusion zone" to protect marine wildlife during LFA deployment, it noted that realistic detection of all animals within the exclusion zone would not be possible.¹²¹ In addition, the court explained that the Navy could employ alternatives, such as pre-operation visual surveys by helicopters or small crafts, to ensure the taking of only small numbers of marine mammals.¹²² Accordingly, the court granted NRDC's motion for summary judgment regarding the adequacy of the Navy's mitigation and monitoring under the MMPA.¹²³

The District Court attempted to reconcile the interests of both parties by granting in part and denying in part each party's motions for summary judgment.¹²⁴ The court issued an injunction that allowed the Navy to meet its needs for peacetime training and testing while protecting marine mammals and other sea animals.¹²⁵

V. CRITICAL ANALYSIS

The Northern District of California's decision in *Evans* is consistent with existing precedent addressing the MMPA's application to actions having the potential to interfere with marine mammals'

12 nautical miles of shoreline, and limiting received levels of LFA sonar to 145 dB at known human dive sites; and (3) forbidding deployment of LFA sonar in the Arctic or Antarctic. *Id.* at 1159.

119. *See id.* at 1159-60 (discussing limitations of Navy's proposed mitigation measures).

120. *See id.* at 1160 (listing measures implemented to limit harm to marine mammals).

121. *See id.* (explaining that visual monitoring of smaller animals would not be effective, especially in rough seas or in dark and that passive sonar often overlooks quieter animals).

122. *See id.* at 1161. The court noted this option of aerial surveillance could only be used when LFA is deployed during daylight and when weather permits to ensure the least practicable adverse impact. *Id.*

123. *See Evans*, 279 F. Supp. 2d at 1164 (concluding that Navy acted arbitrarily and capriciously by failing to: (1) extend coastal exclusion zone; and (2) use aerial surveys for close to shore LFA missions).

124. For a discussion of the court's analysis in *Evans*, see *supra* notes 87-125 and accompanying text.

125. *See Evans*, 279 F. Supp. 2d at 1139 (summarizing holding which resulted in balancing of both parties' interests).

activities.¹²⁶ The decision is troubling, however, due to the detrimental effects it may have on the Navy's ability to maintain combat preparedness and to ensure national security.¹²⁷

The court properly identified the requirements for compliance under the MMPA.¹²⁸ Because it falls under the umbrella as a federal agency, the Navy, like all other agencies, is required to comply with the substantive and procedural requirements of the MMPA.¹²⁹ The *Evans* court followed existing Ninth Circuit precedent in determining the appropriate definition of "harassment" within the MMPA.¹³⁰ Like other cases addressing the "harassment" criteria, the *Evans* court affirmed the requirement for a potentially significant behavioral change or response in a biologically important behavior or activity.¹³¹ As the Navy had correctly identified in the Final Rule, "harassment" requires more than a temporary, non-injurious alteration of marine mammal behavior.¹³²

Unlike the temporary or minor interruptions of wildlife behavior noted by the court in *Tepley*, the *Evans* court recognized that employing low-frequency sonar could potentially cause serious disruptions of marine mammals' customary habits.¹³³ As such, the court in *Evans* readily determined that the steps taken by the Navy were insufficient to ensure that potential disruptions would not significantly impact marine wildlife activity.¹³⁴

126. For a discussion of the court's consistency with existing precedent regarding MMPA interpretation in *Evans*, see *infra* notes 131-36 and accompanying text.

127. For a discussion regarding the detrimental effects the *Evans* decision may produce, see *infra* notes 137-39 and accompanying text.

128. For a discussion of the court's MMPA analysis in *Evans*, see *supra* notes 87-125 and accompanying text.

129. See *Strahan v. Linnon*, 967 F. Supp. 581, 599-601 (D. Mass. 1995) (discussing and applying MMPA).

130. See *Evans*, 279 F. Supp. 2d at 1153-58 (discussing "harassment" under MMPA); see also *Strahan*, 967 F. Supp. at 599-602 (discussing "harassment" under MMPA); see also *Hayashi*, 22 F.3d at 1284 (holding no violation of MMPA because there was no sustained disruption of marine mammals' routine).

131. See *Evans*, 279 F. Supp. 2d at 1155 (recognizing that NMFS' paraphrasing of "disruption of behavior patterns" to "a significant behavioral change in a biologically important behavior or activity" was allowed). See also *Hayashi*, 5 F.3d at 1282-83 (discussing requirement that there be potential for significant behavioral change or response in biologically important behavior or activity).

132. For a discussion of the Navy's proposed definition of "harassment" in the Final Rule, see *supra* notes 106-07 and accompanying discussion.

133. See *Tepley v. Nat'l. Oceanic & Atmospheric Admin.*, 908 F. Supp. 708, 713 (N.D. Cal. 1995) (noting insufficient evidence of "substantial disruption" of wildlife).

134. For a discussion of the district court's analysis regarding the sufficiency of the Navy's attempts to reduce environmental disruptions, see *supra* notes 87-122 and accompanying text.

In addition, the court's findings, that the Navy's Final Rule was insufficient under the MMPA's negligible impact and mitigation and monitoring requirements, reflect earlier courts' strict interpretation of Congress' intentions to control the safety of marine mammal wildlife under the MMPA.¹³⁵ Like other Ninth Circuit cases where the MMPA's negligible impact and mitigation and monitoring requirements have been discussed, the *Evans* court stressed that omissions in these areas, including the Navy's failure to extend the exclusion zone and failure to use aerial observation for LFA sonar missions operated close to shore, were "arbitrary and capricious acts."¹³⁶

Despite the Northern District of California's adherence to precedent and appropriate interpretation of the MMPA, its decision is problematic given the Navy's need to maintain effective national defense measures, particularly in light of the increasing threat level to national security today.¹³⁷ Even though the Navy has already made a substantial effort in assessing marine mammal impacts, developing mitigation efforts that will satisfy the MMPA is increasingly difficult and often results in significant impacts on naval readiness.¹³⁸ One commentator observed that meeting the requirements of the MMPA can be an expensive and time-consuming process.¹³⁹

As evidenced by the court's decision in *Evans*, carrying out military operations, while maintaining compliance with environmental legislation like the MMPA, may not be possible without severely limiting the extent and circumstances of the operations.¹⁴⁰ As a result of constraints upon naval training and military readiness due to leg-

135. See generally *Tepley*, 908 F. Supp. at 708 (discussing MMPA interpretation).

136. See *Evans*, 279 F. Supp. 2d at 1164. For a discussion of the court's mitigation and monitoring analysis in *Evans*, see *supra* notes 117-25 and accompanying text.

137. See *Kiamos*, *supra* note 1, at 480 (noting that current jurisprudence results in problems regarding MMPA compliance). The author states that "[t]he Navy's current antisubmarine skills are the result of decades of realistic and rigorous training, and antisubmarine sonar proficiency is difficult to regain after loss through atrophy." *Id.*

138. See *id.* at 484 (discussing difficulties in compliance measures required under MMPA).

139. *Id.* at 485 (noting that parties resistant to Navy's use of sonar could easily resort to lack of clarity in MMPA's definition of "harassment" to preclude such operations).

140. See *id.* at 487 (discussing possible ways to maintain effective balance between military preparedness and environmental protection). *But see McClure*, *supra* note 37 (quoting Rear Adm. Robert Moeller: "[the Navy] must conduct comprehensive and realistic combat training.").

islation like the MMPA, avenues of potential redress are under review.¹⁴¹

As a short-term course of action, the Department of the Navy should continue to work with the Departments of Commerce and the Interior to make reasonable proposals for legislative changes to the MMPA.¹⁴² Specifically, the agencies should address the overly broad definition of “harassment” under the MMPA, which allows for only small numbers of incidental takes, and the MMPA’s failure to balance national security requirements.¹⁴³

In addition, the Chief of Naval Operations proposed, as an amendment to the MMPA, the “Armed Forces Marine Mammal Protection Act.”¹⁴⁴ The intention behind this amendment is to harmonize the need to protect marine mammals while simultaneously maintaining military readiness within the MMPA’s strict permitting regime.¹⁴⁵ The proposed subsection also provides that upon request of the Secretary of Defense, the President may, for purposes of national security, exempt armed forces operations from application of the MMPA.¹⁴⁶

As a long-term course of action, commentators suggest that the Navy consider using closed environments, such as quarries, lagoons or catch-ponds for testing, to avoid interfering with the MMPA.¹⁴⁷ As noted above, however, the geographic and spatial requirements

141. See Kiamos, *supra* note 1, at 488-93 (advancing potential corrective actions to ensure adequate naval sonar compliance with MMPA such as enhanced agency cooperation and interaction, changes to definition of “harassment,” amendment of MMPA, and exploration of alternative training methods).

142. See *id.* at 488-93 (discussing possible short-term courses of action to ensure adequate compliance with MMPA).

143. See *id.* at 489 (noting that these MMPA issues “affect readiness, compromise the national military strategy, and place sailors and marines at an unnecessary greater degree of risk.”). The author suggests that a proposed amendment to the MMPA would clarify that “harassment” does not apply to actions resulting in insignificant changes in marine mammal behavior, thereby limiting the number of permits required under the MMPA. *Id.*

144. *Id.* at 491 (discussing proposed amendments to MMPA regarding Naval operations).

145. See *id.* at 491-92. The draft proposes that 16 U.S.C. § 1383 be amended to include a Marine Mammal Protection Procedures for the Armed Forces section which would intend for the incidental kill, serious injury or harassment of marine mammals during military operations to be limited to the lowest practical levels consistent with national security requirements. *Id.*

146. See Kiamos, *supra* note 1, at 492 (explaining that passage of proposed draft will ensure protection of marine mammals while making it easier to comply with Act by eliminating need to obtain permit under MMPA).

147. See *id.* at 493 (suggesting long-term courses of action to ensure naval sonar training compliance with MMPA).

necessary to employ a system like SURTASS LFA make it difficult to effectively test in such closed environments.¹⁴⁸

Overall, it appears that it will be necessary to address Naval operations involving use of the new sonar and compliance with the MMPA from an administrative or legislative perspective.¹⁴⁹ As the Northern District of California made clear in its interpretation of the MMPA in *Evans*, the Act, as it currently reads, provides minimal flexibility regarding its protection of the environment.¹⁵⁰

VI. IMPACT

As evidenced by the Northern District of California's decision in *Evans*, carrying out military operations, while maintaining compliance with environmental legislation like the MMPA, may be impossible without severely limiting the extent and circumstances of the operations.¹⁵¹ Even though the District Court sought to maintain a balance between national security and providing adequate protection for marine wildlife, its strict application of the MMPA will likely result in more conservative training measures when employing the new sonar system.¹⁵²

The Northern District of California, guided by existing precedent, appropriately applied the MMPA to the Navy's use of sonar in *Evans*.¹⁵³ Unless the existing requirements of the MMPA are clarified or modified, it appears that military operations will continue to be restrained by the legislation as it presently exists.¹⁵⁴

As an alternative to appealing the decision of the *Evans* court, those who favor a more lenient interpretation of the MMPA and its application to military training operations may be required to re-

148. For a discussion of SURTASS LFA, see *supra* notes 31-42 and accompanying text.

149. For a discussion of alternative approaches to complying with the MMPA, see *supra* notes 141-48 and accompanying text.

150. For a discussion of the court's MMPA analysis in *Evans*, see *supra* notes 87-125 and accompanying text.

151. For a discussion of the *Evans* court's analysis of the MMPA, see *supra* notes 87-125 and accompanying text.

152. See generally, Kiamos, *supra* note 1 (discussing potential adverse effects of limitations placed on military operations due to need for compliance with MMPA).

153. For a discussion of the district court's application of the MMPA, see *supra* notes 87-125 and accompanying text.

154. See Kiamos, *supra* note 1, at 518 (suggesting that clarifying environmental requirements will allow military operations to train more effectively while protecting human health and environment).

sort to administrative or legislative resources.¹⁵⁵ Regulatory agencies should carefully consider Department of Defense and Naval assessments regarding the impact that restricting or modifying training or testing will have on national defense.¹⁵⁶ Proposed amendments to the MMPA may be one potential resolution to the problem of balancing military readiness impacts with environmental impacts in light of Naval training requirements.¹⁵⁷

Carolyn M. Chopko

155. For a discussion of potential short and long-term courses of action to ensure adequate naval sonar training compliance with the MMPA, see *supra* notes 142-48 and accompanying text.

156. See Kiamos, *supra* note 1, at 519 (suggesting remedies for problems regarding compliance with environmental legislation in context of military training operations).

157. See *id.* (suggesting remedies for problems regarding compliance with environmental legislation in context of military training operations).

