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Arctic National Wildlife Refuge (ANWR): Controversies for the 109th Congress

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SUMMARY

One major element of the energy debate is whether to approve energy development in the Arctic National Wildlife Refuge (ANWR) in northeastern Alaska, and if so, under what conditions, or whether to continue to prohibit development to protect the area's biological recreational, and subsistence values. ANWR is rich in fauna, flora, and commercial oil potential. Its development has been debated for over 40 years, but sharp increases in gasoline and natural gas prices from late 2000 to early 2001, terrorist attacks, further increases in 2004-2005, and infrastructure damage from hurricanes have intensified the debate. Few onshore U.S. areas stir as much industry interest as the northern area of ANWR. At the same time, few areas are considered more worthy of protection in the eyes of conservation and some Native groups. Current law forbids energy leasing in the Refuge.

The FY2006 Budget Resolution (H.Con.Res. 95, H.Rept. 109-62) required that the House Resources and Senate Energy Committees achieve savings targets that would be difficult without including ANWR legislation. On October 19, 2005, the Senate Committee reported its title for reconciliation (S. 1932) to the Senate Budget Committee. The Committee's title would open ANWR; supporters designed it to meet the savings target and Senate procedural restrictions on matters included in reconciliation bills.

On Oct. 26, the House Resources Committee recommended an ANWR provision similar to bills previously reported by the Committee. However, the ANWR provisions were struck from the House version of H.R. 4241) before floor consideration at the insistence of a group of Republican Members, according to press reports. The House then substituted its text for the Senate version of S. 1932. The difference on ANWR is widely reported to be a major issue in conference negotiations on S. 1932.

After difficulties in reaching agreement on reconciliation, development advocates are attempting to add ANWR development to the conference report for the Defense appropriations bill (H.R. 2863). Opponents hope to eliminate the provision, through an amendment to strike it or through a filibuster.

Development advocates argue that ANWR oil would reduce U.S. energy markets' exposure to crises in the Middle East; lower oil prices; extend the economic life of the Trans Alaska Pipeline; and create jobs in Alaska and elsewhere in the United States. They maintain that ANWR oil could be developed with minimal environmental harm, and that the footprint of development could be limited to a total of 2,000 acres.

Opponents argue that intrusion on this ecosystem cannot be justified on any terms; that economically recoverable oil found (if any) would provide little energy security and could be replaced by cost-effective alternatives, including conservation; and that job claims are exaggerated. They maintain that development's footprints, being scattered across the landscape, would have a greater impact than is implied by any limit on total acreage. They also argue that limits on footprints have not been worded to apply to extensive Native lands in the Refuge, which could be developed if the Refuge were opened.

MOST RECENT DEVELOPMENTS

To comply with reconciliation directives in the FY2006 Budget Resolution (H.Con.Res. 95, H.Rept. 109-62) to reduce spending, on Nov. 3, 2005, the Senate passed a reconciliation bill (S. 1932) that contained a title to open ANWR to energy development, and was based on a new map of the area within ANWR to be opened. It was unusually succinct compared to previous bills, due to constraints of complying with Senate procedural rules for consideration of reconciliation bills. On Nov. 18, the House passed its version of S. 1932, which contained no ANWR provision, an ANWR title having been removed from the bill before floor consideration. ANWR was reported to be a major stumbling block in informal conference negotiations, and Senate supporters have begun an alternative strategy of adding an ANWR title to the Defense appropriation bill (H.R. 2863). Development opponents face a choice of filibustering a popular bill, or attempting to strike the provision from the conference report on the appropriations bill.

BACKGROUND AND ANALYSIS

The Arctic National Wildlife Refuge (ANWR) consists of 19 million acres in northeast Alaska. It is administered by the Fish and Wildlife Service (FWS) in the Department of the Interior (DOI). Its 1.5-million-acre coastal plain is viewed as one of the most promising U.S. onshore oil and gas prospects. According to the U.S. Geological Survey (USGS), the mean estimate of *technically* recoverable oil is 7.7 billion barrels (billion bbl), and there is a small chance that, taken together, the fields on this federal land could hold 10.7 billion bbl of *economically* recoverable oil (at $55/bbl in 2003 dollars). That amount would be nearly as much as the giant field at Prudhoe Bay, found in 1967 on the state-owned portion of the coastal plain west of ANWR, now estimated to have held almost 14 billion bbl of economically recoverable oil. (See "Oil," below, for further discussion.)

The Refuge, especially the nearly undisturbed coastal plain, also is home to a wide variety of plants and animals. The presence of caribou, polar bears, grizzly bears, wolves, migratory birds, and other species in a de facto wilderness has led some to call the area "America's Serengeti." The Refuge and two neighboring parks in Canada have been proposed for an international park, and several species found in the area (including polar bears, caribou, migratory birds, and whales) are protected by international treaties or agreements. The analysis below covers, first, the economic and geological factors that have triggered interest in development, then the philosophical, biological, and environmental quality factors that have generated opposition to it.

The conflict between high oil potential and nearly pristine nature in the Refuge creates a dilemma: should Congress open the area for energy development or should the area's ecosystem continue to be protected from development, perhaps permanently? What factors should determine whether to open the area? If the area is opened, to what extent can damages be avoided, minimized, or mitigated? To what extent should Congress legislate special management of the area if it is developed, and to what extent should federal agencies be allowed to manage the area under existing law?

Basic information on the Refuge can be found in CRS Report RL31278, *Arctic National Wildlife Refuge: Background and Issues*, by M. Lynne Corn (coordinator). For legal

background, see CRS Report RL31115, *Legal Issues Related to Proposed Drilling for Oil and Gas in the Arctic National Wildlife Refuge (ANWR)*, by Pamela Baldwin. State lands on the coastal plain are shown at [http://www.dog.dnr.state.ak.us/oil/products/maps/maps.htm]. An extensive presentation of development arguments can be found at [http://www.anwr.org], sponsored by a consortium of groups. Opponents' arguments can be found variously at [http://www.alaskawild.org], [http://www.canadianembassy.org/environment/], [http://www.protectthearctic.com/], or [http://www.tws.org/OurIssues/Arctic/index.cfm?TopLevel=Home].

Legislative History of the Refuge

The energy and biological resources of northern Alaska have been controversial for decades, from legislation in the 1970s, to a 1989 oil spill, to more recent efforts to use ANWR resources to address energy needs or to help balance the federal budget. In November 1957, an application for the withdrawal of lands in northeastern Alaska to create an "Arctic National Wildlife *Range*" was filed. On December 6, 1960, after statehood, the Secretary of the Interior issued Public Land Order 2214 reserving the area as the "Arctic National Wildlife Range." The potential for oil and gas leasing was expressly preserved.

In 1971, Congress enacted the Alaska Native Claims Settlement Act (ANCSA, P.L. 92-203) to resolve all Native aboriginal land claims against the United States. ANCSA provided for monetary payments and created Village Corporations that received the surface estate to roughly 22 million acres of lands in Alaska. Village corporations obtained the right to select the surface estate in a certain amount of lands within the National Wildlife Refuge System. Under §22(g) of ANCSA, these lands were to remain subject to the laws and regulations governing use and development of the particular Refuge. Kaktovik Inupiat Corporation (KIC, the local corporation) received rights to three townships along the coast of ANWR. ANCSA also created Regional Corporations which could select subsurface rights to some lands and full title to others. Subsurface rights in Refuges were not available, but selections to substitute for such lands were provided.

The Alaska National Interest Lands Conservation Act of 1980 (ANILCA, P.L. 96-487, 94 Stat. 2371) renamed the Range as the Arctic National Wildlife Refuge, and expanded the Refuge, mostly south and west, to include another 9.2 million acres. Section 702(3) designated much of the original Refuge as a wilderness area, but not the coastal plain, nor the newer portions of the Refuge. Instead, Congress postponed decisions on the development or further protection of the coastal plain. Section 1002 directed a study of ANWR's "coastal plain" (therefore often referred to as the "1002 area") and its resources to be completed within five years and nine months of enactment. The resulting 1987 report was called the *1002 report* or the Final Legislative Environmental Impact Statement (FLEIS). ANILCA defined the "coastal plain" as the lands on a specified 1980 map — language that was later administratively interpreted as excluding many Native lands, even though these lands are *geographically* part of the coastal plain.

Section 1003 of ANILCA prohibited oil and gas development in the entire Refuge, or "leasing or other development leading to production of oil and gas from the range" unless authorized by an act of Congress. (For more history of legislation on ANWR and related developments, see CRS Report RL31278, *Arctic National Wildlife Refuge: Background and Issues*, by M. Lynne Corn, coordinator; for legal issues, see CRS Report RL31115, *Legal*

Issues Related to Proposed Drilling for Oil and Gas in the Arctic National Wildlife Refuge (ANWR), by Pamela Baldwin. For specific actions, including key votes, see CRS Report RL32838, *Arctic National Wildlife Refuge: Legislative Actions Through the 108th Congress*, by Anne Gillis, M. Lynne Corn, Bernard A. Gelb, and Pamela Baldwin.)

Actions in the 109th Congress. The ANWR debate has taken two legislative routes in the 109th Congress: (a) the reconciliation bill (S. 1932 and H.R 4241), which is not subject to Senate filibusters; and (b) legislative bills (H.R. 6 and S. 2863). The budget resolution and reconciliation have been a focus of attention, particularly in the Senate.[1] (See also *Omnibus Energy Legislation*, below.) The FY2006 Senate budget resolution (S.Con.Res. 18) passed by the Senate Budget Committee included instructions to the Senate Committee on Energy and Natural Resources to "report changes in laws within its jurisdiction sufficient to reduce outlays by $33,000,000 in FY2006, and $2,658,000,000 for the period of fiscal years 2006 through 2010." The resolution assumed that the committee would report legislation to open ANWR to development, and that leasing would generate $2.5 billion in revenues for the federal government over five years. Senator Cantwell offered a floor amendment (S.Amdt. 168) on March 16 to remove these instructions. The amendment was defeated (yeas 49, nays 51, Roll Call #52). The House budget resolution (H.Con.Res. 95, H.Rept. 109-17), while instructing the House Resources Committee to provide somewhat smaller reductions in outlays, did not include assumptions about ANWR revenues.

In the end, the budget resolution (H.Con.Res. 95, H.Rept. 109-62) approved by the House and Senate on April 28, 2005, contained reductions in spending targets of $2.4 billion over FY2006 to FY2010 for House Resources and Senate Energy Committees that will be difficult to achieve unless ANWR development legislation is passed. The inclusion of the Senate target particularly set the stage for including ANWR development legislation in a reconciliation bill, since reconciliation bills cannot be filibustered.

Under the Congressional Budget Act of 1974 (CBA, Titles I-IX of P.L. 93-344, as amended, 2 U.S.C. §§601-688), while the target reductions of the budget resolutions are binding on the committees, the associated assumptions are not. The House and Senate Committees might have chosen to reach their targets without following the Budget Committee's assumptions. However, the Senate Energy and Natural Resources Committee did choose to meet its target by recommending ANWR legislation, and the Budget Committee incorporated the recommendation as Title IV of S. 1932, the Deficit Reduction Act of 2005. The House Resources Committee not only included ANWR development legislation, but also proposed other spending reductions and offsetting collections, thereby more than meeting the Committee's targets. These measures were incorporated by the House Budget Committee into an omnibus reconciliation bill. However, before the House bill came to the floor, considerable opposition to the ANWR provision developed, particularly among a number of House Republicans, 24 of whom signed a letter to the Speaker opposing its inclusion. The provision was removed before floor consideration; S. 1932 (with the text of H.R. 4241 inserted in lieu — minus an ANWR provision — passed the House on Nov. 18,

[1] For more on the budget process and budget enforcement, see CRS Report RS20368, *Overview of the Congressional Budget Process*; and CRS Report 98-815, *Budget Resolution Enforcement*, both by Bill Heniff, Jr. For ANWR and reconciliation, see CRS Report RS22304, *ANWR and FY2006 Budget Reconciliation Legislation*, by Bill Heniff, Jr., and M. Lynne Corn.

2005 (yeas 217, Nays 215; Roll call #601). Differences on ANWR have reportedly been a major part of conference negotiations on S. 1932, since ANWR development has substantial opposition and substantial support in both bodies.

There was some question procedurally as to whether ANWR legislation could be part of a reconciliation bill. If the earlier House version of ANWR development were adopted as part of the conference report, and considered by the Senate after conference, then under §313 of the CBA (2 U.S.C. §644, also know as the "Byrd rule"), any Senator may raise a point of order against the inclusion of "extraneous matter" in a reconciliation measure.[2] The section specifies that a provision is considered "extraneous matter" if (among other things) it has no budgetary effect, or if its budgetary effect is "merely incidental" to the non-budgetary components of the provision. If a Senator raises a point of order against the inclusion of ANWR legislation as "extraneous matter" (i.e., as containing certain material unrelated to budgetary effects), and if the point of order is sustained by the chair of the Senate, a motion to waive the rule would require a three-fifths vote of the Senate. For more information, see CRS Report RS22304, *ANWR and FY2006 Budget Reconciliation Legislation*, by Bill Heniff, Jr., and M. Lynne Corn; and "Major Legislative Issues," below.

According to press reports in the weeks after both bodies passed reconciliation bills, any ANWR provision emerged as one of the major disagreements in informal conference negotiations. (Senate conferees were named on Dec. 15; House conferees have not been named.)

ANWR in the Defense Appropriations Bill? As Congress moved toward the December recess, and the chance of an agreement on reconciliation with an ANWR provision seemed to fade, Senator Stevens announced his intention to add an ANWR development title to the FY2006 Defense appropriations bill (H.R. 2863) in conference. Most observers held that the Defense appropriations bill had to pass before the recess, and that inclusion of an ANWR title would force action on ANWR development, by making it difficult for Members who support the military to attempt a filibuster or otherwise block the measure. (Text of an ANWR title, if any, was not available for this update.)

Omnibus Energy Legislation. On April 13, 2005, the House Resources Committee considered and marked up its portion of the omnibus energy bill, before the bill was introduced. The provisions approved by the committee were then incorporated into the House version of H.R. 6, and introduced by Representative Barton, Chair of the Energy and Commerce Committee, on April 18. Title XXII, the Arctic Coastal Plain Domestic Energy Security Act of 2005, was virtually identical to the ANWR title of H.R. 6 in the 108th Congress, differing substantively only in specifying that the Bureau of Land Management is to administer the leasing program, in consultation with FWS. During House consideration on April 20, Representatives Markey and Johnson offered an amendment (H.Amdt. 73) to strike the title; it was rejected (yeas 200, nays 231, Roll Call #122). The House passed H.R. 6 on April 21 (yeas 249, nays 183, Roll Call #132). The Senate passed its version of H.R. 6 on June 28, 2005 (yeas 85, nays 12, Roll Call #158). The Senate version contained no ANWR development provisions. (See CRS Report RL32936, *Omnibus Energy Legislation*,

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[2] See CRS Report RL30862, *The Budget Reconciliation Process: The Senate's "Byrd Rule"*, by Robert Keith.

109th Congress: Assessment of H.R. 6 as Passed by the House for details of this bill.) The ANWR title was omitted in the final measure (P.L. 109-58).

The Energy Resource

The developed parts of Alaska's North Slope hold promise for ANWR. Oil-bearing strata extend eastward from structures in the National Petroleum Reserve-Alaska through the Prudhoe Bay field, and may continue into and through ANWR's 1002 area.

Oil. Estimates of ANWR oil potential, both old and new, depend upon limited data and numerous assumptions about geology and economics. Recent interest has centered especially on parts of the 1002 area west and north of the Marsh Creek anticline, an area which comprises roughly a third of the 1002 area. (See Figure 5 in CRS Report RL31278, *Arctic National Wildlife Refuge: Background and Issues*, by M. Lynne Corn, coordinator.) The most recent government geologic study of oil and natural gas prospects in ANWR, completed in 1998 by the USGS,[3] found an excellent chance (95%) that at least 11.6 billion bbl of oil are present on federal lands in the 1002 area. There also is a small chance (5%) that 31.5 billion bbl or more are present. USGS estimates there is an excellent chance (95%) that 4.3 billion bbl or more are technically recoverable (costs not considered), and a small chance (5%) that 11.8 billion bbl or more are technically recoverable. (For comparison, annual U.S. oil consumption from all sources is about 7.5 billion bbl.)

But the amount that would be *economically* recoverable depends on the price of oil, and crude oil prices have increased substantially in the last two years — ranging between $60 and $65 per barrel in the spot market in early November 2005, and reflecting the effects of Gulf hurricanes on energy markets. In its latest assessment, USGS estimated that, at $55/bbl in 2003 dollars, there is a 95% chance that 3.9 billion bbl or more could be economically recovered and a 5% chance of 10.7 billion bbl or more.[4] These estimates reflect field development practices introduced and cost and price changes since USGS's 1998 assessment. Roughly one-third more oil may be under adjacent state waters and Native lands — areas that could be difficult to develop without access through federal land.

Oil prices, geologic characteristics, cash flow, and any construction constraints would be among the major factors affecting development rates and production levels associated with given volumes of oil resources. The U.S. Energy Information Administration estimated that, at a relatively fast development rate, production would peak 15-20 years after the start of development, with maximum daily production rates of roughly 0.015% of the resource. Production at the slower rate would peak about 25 years after the start of development, at a daily rate equal to about 0.0105% of the resource. Peak production associated with a *technically* recoverable resource of 5.0 billion bbl at the faster development rate would be 750,000 bbl per day, roughly 4% of current U.S. petroleum consumption (about 20.5 million

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[3] U.S. Department of the Interior, Geological Survey (USGS), *The Oil and Gas Potential of the Arctic National Wildlife Refuge 1002 Area, Alaska*, USGS Open File Report 98-34 (Washington, DC: 1999). Summary and Table EA4.

[4] USGS, *Economics of 1998 U.S. Geological Survey's 1002 Area Regional Assessment: An Economic Update*, Open-File Report 2005-1359 (Washington, DC: 2005).

bbl per day). (For economic impacts of development, see CRS Report RS21030, *ANWR Development: Economic Impacts*, by Bernard A. Gelb.)

Natural Gas. Large quantities of natural gas are estimated to be in the 1002 area. Being able to sell this gas probably would enhance the commercial prospects of the 1002 area and the rest of the North Slope — oil as well as gas. However, as with the abundant natural gas discovered at Prudhoe Bay, there currently is no way to deliver the gas to market. Until recently, pipeline construction costs combined with relatively low natural gas prices precluded serious consideration of pipeline construction. Higher gas prices in the last few years increased interest in the construction of a pipeline to transport natural gas to North American markets — directly and/or via shipment in liquified form in tankers, and the 108th Congress acted to facilitate such a pipeline.

Advanced Technologies. As North Slope development proceeded after the initial discovery at Prudhoe Bay, oil field operators developed less environmentally intrusive ways to develop arctic oil, primarily through innovations in technology.

Field exploration has benefitted from new seismic technology. Advanced analytical methods generate high resolution images of geologic structures and hydrocarbon accumulations. More powerful computers allow the manipulation of vastly more data, yielding more precise well locations and, consequently, reducing the number of wells needed to find hydrocarbon accumulations.

Advances in drilling also lessen the footprints of petroleum operations. New drilling bits and fluids and advanced forms of drilling — such as extended reach, horizontal, and "designer" wells — permit drilling to reach laterally far beyond a drill platform, with the current record being seven miles at one site in China. Other advances reduce the space needed for a drilling rig, reduce equipment volume and weight, and lessen the generation of drilling waste. Modules that perform many functions also make production facilities more compact. Production drilling techniques using slim-hole technology such as coiled tubing and multilateral drilling also decrease the footprints, reduce waste, and increase recovery of hydrocarbons per well.

Improved ice-based transportation infrastructure serves remote areas during exploratory drilling on newly developed insulated ice pads. However, for safety reasons, use of ice roads and pads may be limited in the more hilly terrain of the 1002 area; gravel structures could be required for greater safety. In addition, industry has begun experimenting with essentially modified offshore platforms mounted on supporting legs to hold exploration rigs above the tundra. These rigs may offer access for exploration in areas lacking sufficient water or too hilly to permit ice technology. At the same time, warming trends in arctic latitudes have already shortened winter access across the tundra and led to changes in the standards for use of ice roads; if these trends continue, heavy reliance on ice technology could be infeasible. Rigid adherence to ice technology (instead of gravel construction) might put some marginal fields out of reach due to the high cost of exploration, development, or operation. Fields that begin with few roads may expand their gravel road network as the field expands.

Because it is held as a model of modern development, the history of the Alpine field, along the border of the National Petroleum Reserve-Alaska (NPRA), is relevant. This field is run by ConocoPhillips and located west of Prudhoe Bay. It is considered a model of

"roadless" development, because of the short road connecting the two initial pads, and the lack of connection with the remainder of North Slope development, except in winter via ice road. However, with the approval of an additional 5 pads, the expansion of the field will add roughly 27.5 miles of gravel roads to the existing 3 miles of roads, and create 1,845 acres of disturbed soils, including 316 acres of gravel mines or gravel structures.[5] Approximately 150 miles of roads would be constructed if the field were fully developed. If a similar pattern follows in ANWR development, it is unclear whether energy development could be held to a stringent limit on road or other gravel construction and still allow producers to have access to otherwise economic fields.

Proponents of opening ANWR note that these technologies would mitigate the environmental impact of petroleum operations, but not eliminate it. Opponents maintain that facilities of any size would still be industrial sites and would change the character of the coastal plain, in part because the sites would be spread out in the 1002 area and connected by pipelines and (probably) roads. They argue that whether environmental impacts would be minimized would depend in part on the wording of legislation; that there still would be a need for gravel and the scarce water resources of the 1002 area; and that permanent roads, port facilities, and airstrips would follow the initial roadless construction. They further note that spills may occur, and that advanced technologies might not be implemented on Native lands.

A March 2003 report by the National Academy of Sciences (NAS) highlighted impacts of existing development at Prudhoe Bay on arctic ecosystems. Among the harmful environmental impacts noted were changes in the migration of bowhead whales, in distribution and reproduction of caribou, and in populations of predators and scavengers that prey on birds. NAS noted beneficial economic and social effects of oil development in northern Alaska and credited industry for its strides in decreasing or mitigating environmental impacts. It also said that some social and economic impacts have not been beneficial. The NAS report specifically avoided determining whether any beneficial effects (to certain Alaska residents, or local or national economy, etc.) were outweighed by harmful effects (to other Alaska residents, subsistence resources, the environment, etc.).

The Biological Resources

The FLEIS rated the Refuge's biological resources highly: "The Arctic Refuge is the only conservation system unit that protects, in an undisturbed condition, a complete spectrum of the arctic ecosystems in North America" (p. 46). It also said "The 1002 area is the most biologically productive part of the Arctic Refuge for wildlife and is the center of wildlife activity" (p. 46). The biological value of the 1002 area rests on the intense productivity in the short arctic summer; many species arrive or awake from dormancy to take advantage of this richness, and leave or become dormant during the remainder of the year. Caribou have long been the center of the debate over the biological impacts of Refuge development, but

[5] See Figure 2.4.6-1, Alternative F, Preferred Alternative, in Alpine Satellite Development Plan Environmental Impact Statement, Appendix 3, and p. S-8, S-19, and S-30 of Summary, available at [http://www.alpine-satellites-eis.com/alpeis.nsf/?Open], visited on Dec. 13, 2004. Figures given here do not represent full development of the field over the next 20 years.

other species have also been at issue. Among the other species most frequently mentioned are polar bears, musk oxen, and the 135 species of migratory birds that breed or feed there.

The Porcupine Caribou Herd (PCH) calves in or near the 1002 area in most years, and winters south of the Brooks Range in Alaska or Canada; it is the subject of a 1987 executive Agreement Between the United States and Canada on the Conservation of the Porcupine Caribou Herd. The Porcupine Caribou Management Board estimated the herd at 123,000 in 2001 (the most recent year available), but caribou population numbers fluctuate markedly. In both countries, it is an important food source to Native people and others — especially since other meat is either expensive or unavailable.

When cows are slowed by late thaws or heavy snows, they may not reach the 1002 area before calving. In the narrow coastal plain of the 1002 area, displacement to the south puts calving in or near the Brooks Range, where bears, golden eagles, and wolves (all calf predators) are more abundant; it could also force newborn calves to attempt to ford swollen rivers. In 2000, heavy snowfall delayed cows in reaching the 1002 area, and certain calf survival statistics were the lowest ever recorded. The statistics highlighted the importance of the herd's use of the 1002 area.

Some scientists cite studies that show a reduction in density of cows with calves near roads and developed areas around Kuparuk (e.g., Nellemann and Cameron, 1998). They fear that development and production in the 1002 area could cause cows to calve in less desirable locations or prevent the herd's access to sites providing relief from voracious insects. The preferred calving area for the PCH is more confined than for the herd around Prudhoe Bay and vicinity, and nearby similar habitat may not be available to PCH cows.

Based on the Prudhoe Bay experience, it appears that individual animals, especially adult males, habituate to disturbance, and may seek out gravel pads and roads for insect relief. However, cows with young calves appear more sensitive, and avoid roads and other human disturbance for distances of a mile or more. As a result, the presence of roads, gravel mines, drill pads, pipelines, and other footprints of development could limit the cows' access to portions of a preferred calving area or insect relief areas during early calf development. If the gravel road network follows the Alpine scenario and becomes more extensive over time, then displacement could increase, forcing cow/calf pairs to less favorable areas.

An updated assessment of the array of biological resources in the coastal plain was published in 2002 by the Biological Research Division of USGS.[6] The report analyzed new information about caribou, musk oxen, snow geese and other species in the Arctic Refuge, and concluded that development impacts would be significant. A follow-up memo[7] by one of the authors to the director of USGS clarified that if development were restricted to the western portion of the refuge (an option that was being considered by the Administration), the PCH would not be affected during the early calving period, since the herd is not normally

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[6] U.S. Department of the Interior, Geological Survey, *Arctic Refuge Coastal Plain Terrestrial Wildlife Research Summaries*, Biological Science Report, USGS/BRD/BSR-2002-0001.

[7] Griffith, Brad, Memorandum to Director, USGS, "Evaluation of additional potential development scenarios for the 1002 Area of the Arctic National Wildlife Refuge," April 4, 2002.

found in the area at that time. Any impacts that might occur when the herd subsequently moves into the area were not discussed in the memo.

Effects on polar bear dens in the Refuge have also been an issue. Modern winter exploration technology, while an improvement over the environmental impacts of previous technologies in many respects, would be more likely to affect polar bears' winter dens, or conversely, the mitigation required to protect bear dens could increase industry costs. Polar bears are the subject of the international Agreement on the Conservation of Polar Bears, to which the United States is a party. Musk oxen, snow geese, and other species have also been featured in the ANWR debate. (For more about these species, see CRS Report RL31278, *Arctic National Wildlife Refuge: Background and Issues*, by M. Lynne Corn, coordinator.)

In a larger context, many opponents of development see the central issue as whether the area should be maintained as an intact ecosystem — off limits to development — not whether development can be accomplished in an environmentally sound manner. In terms that emphasize deeply held values, supporters of wilderness designation argue that few places as untrammeled as the 1002 area remain on the planet, and fewer still on the same magnificent scale. Any but the most transitory intrusions (e.g., visits for recreation, hunting, fishing, subsistence use, research) would, in their view, damage the "sense of wonder" they see in the area. The mere knowledge that a pristine place exists, regardless of whether one ever visits it, can be important to those who view the debate in this light.

Major Legislative Issues in the 109th Congress

Some of the issues that have been raised most frequently in the current ANWR debate are described briefly below. In addition to the issue of whether development should be permitted at all, key aspects of the current debate include restrictions that might be specified in legislation, including the physical size, or footprints, of development; the regulation of activities on Native lands; the disposition of revenues; labor issues; oil export restrictions; compliance with the National Environmental Policy Act, and other matters. (References below to the "Secretary" refer to the Secretary of the Interior, unless stated otherwise.) The analysis below describes the ANWR title of the reconciliation recommendations as submitted by the House Committee on Resources (and later dropped before floor consideration), and §4001 of S. 1932, the Senate reconciliation bill. Because of the lack of detail in §4001, many aspects of ANWR leasing would be left to administrative decisions, with levels of public participation in some instances curtailed along with judicial review, as noted below.

Environmental Direction. If Congress authorizes development, it could address environmental matters in several ways. Congress could impose a higher standard of environmental protection because the 1002 area is in a national wildlife refuge or because of the fragility of the arctic environment, or it could legislate a lower standard to facilitate development. The choice of administering agency and the degree of discretion given to it could also affect the approaches to environmental protection. For example, Congress could make either FWS or BLM the lead agency. It could include provisions requiring use of "the best available technology" or "the best commercially available technology" or some other general standard. Congress could also limit judicial review of some or all of a development program, including standards and implementation.

The House bill as reported would have named BLM as the lead agency. Section 6107(a) as reported would require the Secretary to administer the leasing program so as to "result in no significant adverse effect on fish and wildlife, their habitat, and the environment, [and to require] the application of the best commercially available technology...." Section 6103(a)(2) would also have required that this program be done "in a manner that ensures the receipt of fair market value by the public for the mineral resources to be leased." It is unclear how the two goals of environmental protection and fair market value are to relate to each other (e.g., if environmental restrictions might make some fields uneconomic). Subsections 6106(a)(3) and (5) would require lessees to be responsible and liable for reclamation of lands within the Coastal Plain (unless the Secretary approves other arrangements), and the lands must support pre-leasing uses or a higher use approved by the Secretary. There were requirements for mitigation, development of regulations, and other measures to protect the environment. These included prohibitions on public access to service roads and other transportation restrictions. Other provisions might also affect environmental protection. (See "Judicial Review," below.) The Senate bill (§4001(b)(1)(B)) directs the Secretary to establish and implement an "environmentally sound" leasing system, but does not provide further direction.

The Size of Footprints. Newer technologies permit greater consolidation of leasing operations, which tends to reduce the environmental impacts of development. On this issue, the debate in Congress has focused on the size of the footprints in the development and production phases of energy leasing. The term *footprint* does not have a universally accepted definition, and therefore the types of structures falling under a "footprint restriction" are arguable (e.g., the inclusion of exploratory structures, roads, gravel mines, port facilities, etc.). (See CRS Report RL32108, *North Slope Infrastructure and the ANWR Debate*, by M. Lynne Corn, which describes development features on the North Slope.) In addition, it is unclear whether exploratory structures, or structures on Native lands, would be included under any provision limiting footprints. (See CRS Report RS22143, *Oil and Gas Leasing in the Arctic National Wildlife Refuge (ANWR): The 2,000-Acre Limit*, by Pamela Baldwin and M. Lynne Corn, for a discussion of an acreage limit.) The new map accompanying the Senate bill includes the Native lands in the Coastal Plain leasing area, but how the federal leasing program will apply to those lands is not clear. See *New Maps*, below.

Development advocates have emphasized the acreage of surface disturbance, while opponents have emphasized the dispersal of not only the structures themselves but also their impacts over much of the 1.5 million acres of the 1002 area. One single facility of 2,000 acres (3.1 square miles) would not permit full development of the 1002 area. Instead, full development of the 1002 area would require that facilities, even if limited to 2,000 acres in total surface area, be widely dispersed. Dispersal is necessary due to the limits of lateral (or extended reach) drilling: the current North Slope record for this technology is 4 miles. If that record were matched on all sides of a single pad, at most about 4% of the Coastal Plain could be developed from that pad. Even if the current world record (seven miles) were matched, only about 11% of the 1002 area could be accessed from a single compact 2,000-acre facility. In addition, drilling opponents argue that energy facilities have impacts on vegetation and wildlife well beyond areas actually covered by development.

The House bill as reported (§6107(d)(9)) would have provided for consolidation of leasing operations to reduce environmental impacts of development. House §6107(a)(3) further would have required, "consistent with the provisions of section 6103" (which include

ensuring receipt of fair market value), that the Secretary administer the leasing program to "ensure that the maximum amount of surface acreage covered by production and support facilities, including airstrips and any areas covered by gravel berms or piers for the support of pipelines, does not exceed 2,000 acres on the Coastal Plain." The terms used were not defined in the bill and therefore the range of structures covered by the restriction is arguable (e.g., whether roads, gravel mines, causeways, and water treatment plants would be included under this provision). In addition, the wording may not apply to structures built during the exploratory phase. An essentially identical provision (§4001(f)) is found in the Senate bill.

Native Lands. ANCSA resolved aboriginal claims against the United States by (among other things) creating Village Corporations that could select surface lands and Regional Corporations that could select surface and subsurface rights as well. Kaktovik Inupiat Village (KIC) selected surface lands (originally approximately three townships) along the coastal plain of ANWR, but these KIC lands were administratively excluded from being considered as within the administratively defined "1002 Coastal Plain." These lands and a fourth township that is within the administratively defined Coastal Plain (these four totaling approximately 92,000 acres) are all within the Refuge and subject to its regulations. The Arctic Slope Regional Corporation (ASRC) obtained subsurface rights beneath the KIC lands pursuant to a 1983 land exchange agreement. In addition, there are currently more than 10,000 acres of conveyed or claimed individual Native allotments in the 1002 area that are not expressly subject to its regulations. Were oil and gas development authorized for the federal lands in the Refuge, development would then be allowed or become feasible on the approximately 100,000 acres of Native lands, possibly free of any acreage limitation applying to development on the federal lands, depending on how legislation is framed. The extent to which the Native lands could be regulated to protect the environment is uncertain, given the status of allotments and some of the language in the 1983 Agreement with ASRC. (See also CRS Report RL31115, *Legal Issues Related to Proposed Drilling for Oil and Gas in the Arctic National Wildlife Refuge (ANWR)*, by Pamela Baldwin, and *New Maps*, below.)

New Maps. Both the House and Senate have created new maps of the "Coastal Plain" that will be the subject of leasing. See CRS Report RS22326, *Legislative Maps of ANWR*, by M. Lynn Corn and Pamela Baldwin. The Coastal Plain was defined in § 1002 of ANILCA as the area indicated on an August, 1980 map. This map is now missing. An administrative articulation of the boundary was authorized by §103(b) of ANILCA, and has the force of law. This legal description was completed in 1983 (48 Fed. Reg. 16838), but questions also surround this description. (See CRS Report RL31115.) The description excluded three Native townships from the articulated coastal plain. Some bills in various Congresses also have excluded these same Native lands by referring to the 1980 map and the administrative description. However, if the 1980 map is missing, evaluating whether the administrative description properly excluded the Native lands is impossible, and, as noted, the fourth Native township (selected later) was not excluded from the coastal plain by that description. The Senate Energy Committee bill (§4001(a)) provided a new map, dated September 2005, to accompany its submission to the Budget Committee for reconciliation. This map includes in the "Coastal Plain" all Native lands (see Figure 1 in CRS Report RS22326, *Legislative Maps of ANWR*). However, the bill text remains unchanged and it is not clear what extent of federal control of Native lands was intended or accomplished by the map change. For example, language is retained that "notwithstanding any other provision of law" directs a 50/50 revenue split between the state of Alaska and the federal government, thereby possibly giving rise to Native claims for compensation for revenues from their lands.

If this provision was not intended to apply to Native lands, it is not clear whether other provisions also might not apply. Also, some of the terms in the 1983 Agreement call for an express congressional override to negate their effects, and the text of the bill does not discuss the Native lands.

The House also adopted a new map, one that appears to follow the 1983 administrative articulation of the coastal plain. The map appears to exclude the three Native townships, but leave the fourth within the coastal plain to which the leasing provisions would apply.

Revenue Disposition. Another issue has arisen during debates regarding disposition of possible revenues — whether Congress may validly provide for a disposition of revenues formula other than the 90% state - 10% federal split mentioned in the Alaska Statehood Act. A court in *Alaska v. United States* (35 Fed. Cl. 685, 701 (1996)) indicated that the language in the Statehood Act means that Alaska is to be treated like other states for federal leasing conducted under the Mineral Leasing Act (MLA), which contains (basically) a 90%- 10% split, but that Congress can establish a non-MLA leasing regimen — for example, the separate leasing arrangements that govern the National Petroleum Reserve-Alaska, where the revenue sharing formula is 50/50.

Several sections of the House bill as reported related to revenues. Section 6109 would have provided that 50% of adjusted revenues be paid to Alaska, and the balance be deposited in the U.S. Treasury as miscellaneous receipts, except for a portion (not to exceed $11 million in an unspent balance, with $5 million available for annual appropriation). Under §6112, this portion was to assist Alaska communities in addressing local impacts of energy development. Under §6103(a), the Secretary was to establish and implement a leasing program *under the Mineral Leasing Act*, yet "notwithstanding any other provision of law," §6112 directed a revenue sharing program different from that in the MLA. Establishing a leasing program under the MLA, yet providing for a different revenue disposition, may again raise validity questions. If the alternative disposition were struck down and the revenue provisions were determined to be severable, Alaska could receive 90% of ANWR revenues. In a different subtitle, §6514 would create the Federal Energy Natural Resources Enhancement Fund and apply a portion of moneys received under the revenues section of the MLA to certain wildlife and habitat purposes. It is not clear whether moneys from ANWR leasing would be eligible for this use, since leasing in ANWR while under the MLA, would have special revenue splitting provisions. The Senate bill does not refer to leasing being under the MLA, and "notwithstanding any other provision of law" directs receipts from leasing and operations "authorized under this section" to be divided equally between the state of Alaska and the federal government. Because of the change in the Senate definition of "Coastal Plain," this provision may include revenues from Native lands.

Project Labor Agreements (PLAs). A recurring issue in federal and federally funded projects is whether project owners or contractors should be required, by agreement, to use union workers. PLAs establish the terms and conditions of work that will apply for the particular project, and may also specify a source to supply the craft workers. Proponents of PLAs, including construction and other unions, argue that PLAs ensure a reliable, efficient labor source, help keep costs down and ensure access for union members to federal and federally funded projects. Opponents, including nonunion firms and their supporters, believe that PLAs inflate costs, reduce competition, and unfairly restrict access to those projects. There is little independent information to sort out the conflicting assertions.

The House bill (§6106(b)) as reported would have directed the Secretary to require lessees in the 1002 area to "negotiate to obtain a project labor agreement" — "recognizing the Government's proprietary interest in labor stability and the ability of construction labor and management to meet the particular needs and conditions of projects to be developed...."

Oil Export Restrictions. Export of North Slope oil in general, and any ANWR oil in particular, has been an issue, beginning at least with the authorization of the Trans Alaska Pipeline System (TAPS) and continuing into the current ANWR debate. Much of the pipeline's route is on federal lands and the Mineral Leasing Act of 1920 (MLA) initially prohibited export of oil transported through pipelines granted rights-of-way over federal lands (16 U.S.C. §185(u)). The Trans-Alaska Pipeline Authorization Act (P.L. 93-153, 43 U.S.C.§1651 et seq.) specified that oil shipped through it could be exported, but only under restrictive conditions. Subsequent legislation strengthened the TAPS export restrictions further.[8] Much of this oil went to the West Coast; the rest was shipped to the Gulf Coast through Panama.

In the early to mid-1990s, California, North Slope, and federal offshore production, plus imports, combined to produce large crude oil supplies relative to demand. California prices fell, causing complaints from California and North Slope producers. On November 28, 1995, P.L. 104-58 (109 Stat. 557) was enacted; Title II amended the MLA to provide that oil transported through the pipeline may be exported unless the President finds, after considering stated criteria, that exports are *not* in the national interest (30 U.S.C. §185(s)). The President may impose terms and conditions, and authority to export may be modified or revoked. North Slope exports rose to a peak of 74,000 bbl/day in 1999, to 7% of North Slope production. North Slope oil exports ceased voluntarily in May 2000, and have since been minimal.

If Congress wished to limit export of any oil from the 1002 area, it might again apply the restriction to ANWR oil transported through TAPS. However, if current warming trends in the Arctic continue, oil shipment via tanker could become practical. If crude oil prices provided sufficient incentive for such shipments, an export ban that applies only to oil transported through TAPS would not be sufficient to prevent export of any ANWR oil. The House bill as reported (§6106(a)(8)) would have prohibited the export of oil produced in the 1002 area as a condition of a lease. The Senate bill has no similar provision.

NEPA Compliance. The National Environmental Policy Act of 1969 (NEPA, P.L. 91-190; 43 U.S.C. §§4321-4347) requires the preparation of an environmental impact statement (EIS) to examine major federal actions with significant effects on the environment, and to provide public involvement in agency decisions. The last full EIS examining the effects of leasing development in ANWR was completed in 1987, and some observers assert that a new EIS is needed to support development now. NEPA requires an EIS to analyze an array of alternatives, including a "no action" alternative. Some development supporters would like to see the process truncated, in light of past analyses and to hasten production. Development opponents, and NEPA supporters, argue that the 18-year gap since the last analysis necessitates a thorough update, and stress the flaws they found in the 1987 FLEIS.

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[8] Energy Policy and Conservation Act of 1975 (P.L. 94-163), 1977 amendments to the Export Administration Act (P.L. 95-52; P.L. 95-223), and Export Administration Act of 1979 (P.L. 96-72).

Section 6103(c) of the House bill as reported would have deemed the 1987 FLEIS to satisfy NEPA requirements with respect to prelease activities and the development and promulgation of leasing regulations, and requires the Secretary to prepare an EIS of all other actions authorized by the subtitle before the first lease sale. Consideration of alternatives is to be limited to two choices, a preferred leasing action and a "single leasing alternative." (Generally, an EIS must analyze several alternatives, including a "no action" alternative.) Compliance with the subsection is deemed to satisfy all requirements to analyze the environmental effects of proposed leasing. S. 1932 (§4001(c)) has similar provisions, but does not expressly require an EIS for leasing.

Compatibility with Refuge Purposes. Under current law for the management of national wildlife refuges (16 U.S.C.§668dd), and under 43 C.F.R. §3101.5-3 for Alaskan refuges specifically, an activity may be allowed in a refuge only if it is compatible with the purposes of the particular Refuge and with those of the Refuge System as a whole. Section 6103(c) of the House bill as reported and §4001(c) of S. 1932 state that the energy leasing program and activities in the coastal plain are deemed to be compatible with the purposes for which ANWR was established and that no further findings or decisions are required to implement this determination. This language appears to eliminate the usual compatibility determination processes. The extent of leasing "activities" that might be included as compatible is debatable and arguably might encompass necessary support activities, such as construction and operation of port facilities, staging areas, and personnel centers.

Judicial Review. Leasing proponents urge that any ANWR leasing program be put in place promptly and argue that expediting, curtailing, or prohibiting judicial review is desirable to achieve that goal. Judicial review can be expedited through procedural changes such as reducing the time limits within which suits must be filed, avoiding some level of review, curtailing the scope of the review, or increasing the burden imposed on challengers. The House bill as reported (§6108) required that any complaints seeking judicial review be filed within 90 days. Sections 6108(a)(1) and (a)(2) appeared to contradict each other as to whether suits are to be filed in "any appropriate district court" or in the Court of Appeals in Washington, DC. The House bill (§6108(a)(3)) would also have limited the scope of review by stating that review of a secretarial decision, including environmental analyses, would be limited to whether the Secretary complied with the terms of the ANWR subtitle, that it would be based on the administrative record, and that the Secretary's analysis of environmental effects is "presumed to be correct unless shown otherwise by clear and convincing evidence to the contrary." This standard is unclear, but in this context arguably would make overturning a decision more difficult. S. 1932 is similar, but requires complaints to be filed only in the U.S. Court of Appeals in Washington, DC (§4001(c)) and omits the presumption concerning the Secretary's analysis of environmental effects.

Special Areas. Some have supported setting aside certain areas in the coastal plain for protection of their ecological or cultural values. This could be done by designating the areas specifically in legislation, or by authorizing the Secretary to set aside areas to be selected after enactment. The FLEIS identified four special areas that together total more than 52,000 acres. The Secretary could be required to restrict or prevent development in these areas or any others that may seem significant, or to select among areas if an acreage limitation on such set-asides is imposed. The House bill as reported (§6103(e)) would have allowed the Secretary to set aside up to 45,000 acres (and names one specific special area) in which leases, if permitted, would forbid surface occupancy. As mentioned above, the

FLEIS identified four special areas that together total more than 52,000 acres, so the Secretary would be required to select among these areas or any others that may seem significant. Section 6103(f) also stated that the closure authority in the ANWR title is to be the Secretary's sole authority, which might limit possible secretarial actions under the Endangered Species Act. The Senate bill has no provision for special areas.

Non-Development Options. Several options are available to Congress that would either postpone or forbid development, unless Congress were to change the law. These options include allowing exploration only, designating the 1002 area as wilderness, and taking no action. Some have argued that the 1002 area should be opened to exploration first, before a decision is made on whether to proceed to leasing. Those with this view hold that with greater certainty about any energy resources in the area, a better decision could be made about opening some or all of the 1002 area for leasing. This idea has had little support over the years because various interests see insufficient gain from such a proposal. (CRS Report RL31278, *Arctic National Wildlife Refuge: Background and Issues*, coordinated by M. Lynne Corn, discusses the pros and cons of this approach.)

Another option is wilderness designation. Energy development is not permitted in wilderness areas, unless there are pre-existing rights or unless Congress specifically allows it or reverses the designation. Wilderness designation would tend to preserve existing recreational opportunities and related jobs, as well as the existing level of protection of subsistence resources, including the Porcupine Caribou Herd. Under ANILCA and the 1983 Agreement, development of the surface and subsurface holdings of Native corporations in the Refuge is precluded as long as oil and gas development is not allowed on the federal lands in the Refuge. Because current law prohibits development unless Congress acts, the no action option also prevents energy development. Those supporting delay often argue that not enough is known about either the probability of discoveries or about the environmental impact if development is permitted. Others argue that oil deposits should be saved for an unspecified "right time." H.R. 567 and S. 261 would designate the 1002 area as part of the National Wilderness System.

LEGISLATION

H.Con.Res. 95 (Nussle)

FY2006 budget resolution, included spending targets for Committee on Resources. Introduced March 11, 2005; referred to Committee on Budget. Reported March 11, 2005 (H.Rept. 109-17). Passed House March 17, 2005 (yeas 218, nays 214, Roll Call #88). Passed (amended) in Senate in lieu of S.Con.Res. 18 (no report). April 28, 2005, conference report filed (H.Rept. 109-62), House approved conference report (yeas 214, nays 211, Roll Call #149), and Senate approved conference report (yeas 52, nays 47, Roll Call #114).

H.R. 6 (Barton)

An omnibus energy act; Title XXII opens ANWR coastal plain to energy development. Introduced April 18, 2005; considered and marked up by Committee on Resources April 13, 2005 (no report). Considered by House April 20-21, 2005. Markey/Johnson amendment (H.Amdt. 73) to strike ANWR title rejected (yeas 200, nays 231, Roll Call #122) April 20. Passed April 21, 2005 (yeas 249, nays 183, Roll Call #132). Passed Senate, with no ANWR

development provision, June 28, 2005 (yeas 85, nays 12, Roll Call #158). Conference agreement omits ANWR title; signed by the President August 8, 2005 (P.L. 109-58).

H.R. 39 (D. Young)

Repeals current prohibition against ANWR leasing; directs Secretary to establish competitive oil and gas leasing program; specifies that the 1987 FLEIS is sufficient for compliance with the national Environmental Policy Act; authorizes set-asides up to 45,000 acres of Special Areas that restrict surface occupancy; sets minimum for royalty payments and for tract sizes; and for other purposes. Introduced January 4, 2005; referred to Committee on Resources.

H.R. 567 (Markey)

Designates Arctic coastal plain of ANWR as wilderness. Introduced February 2, 2005; referred to Committee on Resources.

H.R. 4241 (Nussle)

FY2006 Reconciliation. Title to open ANWR struck before floor consideration. Introduced November 7, 2005; passed House November 18, 2005 (yeas 217, nays 215, Roll Call #601). Inserted in lieu of the text of S. 1932.

S.Con.Res. 18 (Gregg)

FY2006 budget resolution; includes spending targets for Committee on Energy and Natural Resources. Introduced January 31, 2005; referred to Committees on Budget, and Rules and Administration. Reported March 10, 2005 (no written report). Cantwell amendment (S.Amdt. 168, relating to ANWR) defeated March 16, 2005 (yeas 49, nays 51, Roll Call #52). Passed Senate March 17, 2005 (yeas 51, nays 49, Roll Call #81). Senate incorporated measure in H.Con.Res. 95 as an amendment; passed H.Con.Res. 95 in lieu.

S. 261 (Lieberman)

Designates Arctic coastal plain of ANWR as wilderness. Introduced February 2, 2005; referred to Committee on Environment and Public Works.

S. 1891 (Murkowski)

Authorizes energy development and economically feasible oil transportation in ANWR. Introduced October 19, 2005; referred to Committee on Energy and Natural Resources.

S. 1932 (Gregg)

Omnibus budget reconciliation; Title IV would open ANWR. Introduced, referred to Committee on Budget, and reported October 27, 2005 (no written report). Passed Senate November 3, 2005 (yeas 52, nays 47, Roll Call #303). Passed House (amended) November 18, 2005. Senate conferees appointed Dec. 15, 2005.

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