# \*\*\*Case Extensions\*\*\*

## \*\*Case Defense\*\*

### Waterways K2 Commodities

#### Current waterways are failing to support the large amount of commodities that pass through.

McGregor 12 (Brian McGregor, Supervisory Agricultural Marketing Specialist at the USDA, 2/28/12, “A Reliable Waterway System Is Important to Agriculture” USDA, [http://www.ams.usda.gov/AMSv1.0/ getfile? dDocName=STELPRDC5097258](http://www.ams.usda.gov/AMSv1.0/%20getfile?%20dDocName=STELPRDC5097258))

Inadequate channel depths and widths can lead to higher transportation costs. Barges and vessels may be loaded to less than capacity and more barges and vessels may be required to ship the same amount of commodities, and one-way or day time only traffic restrictions may be imposed. In recent years there have been extended periods where low river levels and reduced channel widths impeded grain barge movements. When river levels are low, barges must be loaded lighter than normal and the number of barges in a tow may be reduced to the available channel width. At a 9-foot draft, a barge has 1,500 short tons of capacity; for each foot of reduced draft, the barge loses about 200 short tons of capacity. When harbor channels are at less than authorized depths, S-Class container vessels lose 3,840 tons of cargo capacity per foot, Panamax bulk grain carriers lose 2,148 tons per foot, and Great Lakes ocean-bound vessels lose 1,389 tons per foot.

### Waterways K2 Jobs

#### Waterway Help Create Jobs and Economic Stability

Ross 12 [Mike, Congressman Fourth District of Arkansas, “Infrastructre Key to Continue- Ross Says We Need to Start Rebuilding America Again”, Legislative Update, 3/12, <http://ross.house.gov/News/DocumentSingle.aspx?DocumentID=284335>]

I believe there is no better way to create jobs and put our local economies on a path to long-term economic growth than to focus on the development of first-class roadways, rail opportunities, ports, and inland waterways. Similar to how President Roosevelt's Works Progress Administration (WPA) Program helped create jobs during the Great Depression, we need a modern-day WPA-type investment in our infrastructure now.¶ Strong waterways are also a bridge to economic growth and an improved standard of living throughout our state. Arkansas's waterways play a key role in economic development here at home and across this nation ensuring we are able to transport goods, maintain access to water supplies, and take advantage of our state's recreational and tourism opportunities.¶ Adequately funding our waterway infrastructure in Arkansas's Fourth Congressional District has been a priority of mine during my time in Congress. We have vital waterways in our district that serve as critical transportation routes including the Red River, the Ouachita-Black Navigation System, the Arkansas River and the Mississippi River, which forms the eastern border of our state and is the main trade corridor for goods produced in the northern part of the U.S. traveling to gateway ports near the Gulf. Investing in and maintaining these waterways will enhance manufacturing and distribution opportunities and create jobs here in Arkansas.

## \*\*Case Offense\*\*

### 2AC A2: Dams Turn

#### There are more than 85,000 dams, the link is empirically denied

American Society of Civil Engineers 8 [“Dams”, Report Card for America’s Infrastructure, 10/21, http://www.infrastructurereportcard.org/fact-sheet/dams]

The National Inventory of Dams (NID), which is maintained by the U.S. Army Corps of Engineers (USACE), shows that the number of dams in the U.S. has increased to more than 85,000, but the federal government owns or regulates only 11% of those dams.3,5 Responsibility for ensuring the safety of the rest of the nation’s dams falls to state dam safety programs. Many state dam safety programs do not have sufficient resources, funding, or staff to conduct dam safety inspections, to take appropriate enforcement actions, or to ensure proper construction by reviewing plans and performing construction inspections. For example, Texas has only 7 engineers and an annual budget of $435,000 to regulate more than 7,400 dams.3 That means each inspector is responsible for more than 1,050 dams. Worse still, Alabama does not have a dam safety program despite the fact that there are more than 2,000 dams in the state. And in some states many dams are specifically exempted from inspection by state law. In Missouri there are 740 high hazard potential dams that are exempted because they are less than 35 feet in height. The task for the states is an enormous challenge. (See Table)¶ ¶ While the total number of dams is increasing, the number of high hazard potential dams is also increasing at an alarming rate, now totaling 15,237.3 That represents an increase of more than 3,300 new high hazard potential dams since 2007. This increase is a result of new development below dams, which is dramatically increasing the consequences of failure and resulting in the reclassification of dams. This change in classification requires that significantly greater safety standards be met given the greater consequences of dam failure.

#### Dams can be environmentally friendly

International Commission On Large Dams 99 [“Benefits and Concerns About Dams”, July, http://www.swissdams.ch/Committee/Dossiers/BandC/Benefits\_of\_and\_Concerns\_about\_Dams.pdf]

Throughout the history of the world, dams have played a major role in storing and managing water needed to support civilization. Today, the world is undergoing major changes in ethical values, business practices and living conditions as a result of rapid advances in technology and expanded communications associated with the continued unprecedented increase in population. At the same time there has been a careless use of our natural resources and accelerated pollution of the environment.10¶ ICOLD’s intent is to advance the art and science of building dams to produce the most efficient, effective and responsible water resource projects for the benefit of society. This is accomplished by developing and promoting technically sound engineering concepts and guidelines that are compatible with the social, environmental, financial and operational requirements of a water resources development project. The planning process must carefully document the proposed benefits as well as the concerns and impacts that must be mitigated. ICOLD’s intent is ensure that the dams and associated structures required for water resource development and management around the world are safe, economical, environmentally responsible, socially acceptable and that they are operated and maintained for sustained reliability.¶ The concerns and adverse impacts of dams can be minimized or eliminated by careful planning and design that incorporate public involvement and input in the early stages of this process. When the appropriate mitigation measures are identified early in the planning and design process for a dam and reservoir, they can be efficiently and effectively incorporated into the design, construction and operation of the project.¶ Water remains the vital resource to sustain civilization around the world. Sustainability of life in some regions of the world is threatened by the imbalance between the demands and available supplies of water, food and energy. Dams and reservoirs can and should be compatible with the social and natural environment of the region. The challenge for the future will be the utilization of dams and reservoirs for the wise management of the world’s water resources as part of each nation’s social and economic development goals.

#### Dams have positive environmental benefits and few dams cause problems – the negative evidence focuses too much on individual failures

Hadfield et al. 2K [“THE POSITIVE IMPACTS OF RIVER DAMS UPON THE ESTUARINE ENVIRONMENT”, School of Ocean and Earth Sciences, Southampton University, 11/14/00, http://www.soes.soton.ac.uk/teaching/courses/oa217/groupe.pdf]

For many years river dams have been seen to have a negative effect upon many aspects of the estuarine environment. Research taken from the viewpoint of both¶ industry and the environment can show that there are many benefits to be gained as long as proposals for such constructions are considered not only on the basis of cost, but also on short and long-term impacts upon the surrounding environment. Past failings of projects not thought out must not be hidden, but acknowledged and learnt from. In this way the estuarine environment can be stabilised and improved in areas such as habitat, sediment and water dynamics, pollution concentrations, biomass concentrations, species numbers, aquaculture and navigation. This paper will concentrate upon three important aspects, biological influences, sedimentary fluxes and hydrology / water quality, which govern the estuarine conditions, all of which have a direct bearing upon the dynamics of the estuary as a whole. INTRODUCTION Estuaries are semi-enclosed coastal areas where freshwater and seawater interact. They provide habitats for numerous specialised species and are home to an estimated 2 billion of the world’s population. Within the geological record they are short-lived features, vulnerable to erosion, deposition, infilling, eustatic and isostatic sea level changes, with a constantly evolving morphology. The delicate hydrological, biological, chemical and sedimentary cycles can be affected by many anthropogenic activities, which alter the dynamic balance achieved by each estuary. However allegations about the environmental impact on estuaries of dams cannot be debated constructively without looking at the many benefits afforded by the placement of such structures. Between 1950 and 1982, an estimated 30,000 dams were constructed, (Milliman, 1997) and whilst there were problems with some of these structures, many of them help mitigate the effects of naturally occurring disasters. By drawing on current research and considering examples from Nigeria, Egypt, Canada, USA and Spain, this paper will investigate the positive effects for the biological, sedimentary and hydrological life of an estuary, in balance to the arguments of degradation and destruction of the environment. BIOLOGICAL The main gain for the biota within the estuarine environment is that of control. Regulation of the water and sediment flow can have the following positive impacts: • reduction in salinity fluctuation within the estuary, caused by flooding and freshwater storm surges. This regulates the osmotic pressures faced by many marine organisms, (Segar, 1998). • Control of nutrients into the estuary prevents excessive blooming and the subsequent eutrophication of the water. This is especially important in areas where coastal upwelling already supplies nutrients, (Segar, 1998). • Control of nutrients also stabilises the annual supply into the estuary, thereby aiding sustainable aquaculture, such as Mussel culture in Spain. • Control of excessive water level fluctuations can protect habitats and, in the case of the Bay of Fundy Barrages, it is envisaged that saltmarshes could increase, thereby enlarging and stabilising habitats, (Hodd, 1977). • Reduced sediment suspension, especially of fine material, will improve the visual orientation and feeding for fish, and also improve the success of spawning and egg survival by reducing the risk of coverage by settling fines (Bernacsek, 1984) & (Milhous, 1996). • Reduction in freshwater input can encourage further population of the estuary by stenohaline, in addition to, euryhaline organisms, thereby increasing the number of species found within the estuarine environment, (Lalli & Parsons, 1997). SEDIMENTARY The benefits to the sedimentary cycle arise out of the ability to control the suspension and settling of the river borne material. If sediment discharge is higher from rivers than coastal erosion can ‘control’, deltas can form, altering tidal patterns, current flows, water quality and many habitats. Control of sediment fluxes up-river can therefore not only lengthen the morphological change in estuarine dynamics, but it can help preserve current physical oceanographic parameters with little change. • Reduction in sediment influx can help maintain navigable waterways within the estuary. In the USA, water borne commerce grew by 85% in 20 years, from 1950-1970. The resulting need to dredge channels resulted in destruction of benthic, especially seagrass and mudflat, communities, (Kirby et al, 1975), and poisoning of many estuarine fish through contact with lethal concentrations of solids which were disturbed through dredging, (Sherk et al, 1975). • The holding of sediment behind the dam can also help prolong the life of an estuary by reducing the shortening and infilling caused by settling of sediment due to flocculation at the turbidity maximum. This can be seen at the South Saskatchewan River, where the sediment load has been reduced by 91% post dam, (Rasid, 1979). • Reduced sediment flow can also help prevent formation of deltaic systems, zones of shoaling at the turbidity maximum, (Dyer, 1997), and ephemeral bars which can lead to stagnation of the estuarine waters during dry seasons. • Sediments can ‘trap’ pollutants via the process of flocculation, however these pollutants can be also either be held behind the dam, thereby preventing harm to the estuary, or a controlled water flow can allow a longer flushing time through a waterway, thereby ensuring sediments have longer to trap the pollutants. The latter case can be seen in Egypt, where the interdigitated estuaries in the Nile Delta benefit from the controlled flushing time dictated by the Aswan Dam. • Reduction of peaks in sediment flow due to seasonal / storm events, as seen on the Ebro River and estuary, Spain, (Ibanez, 1995). HYDROLOGICAL The hydrological cycle within an estuary is vitally important for all organisms. It can impact upon all other areas, such as sediment suspension and flushing times. Control of freshwater input into such a cycle can therefore help stabilise major events like storm surges and flooding, which can disrupt the estuarine balance, whilst enabling patterns within the physical oceanography to be monitored and classified. • There are many examples of control of the mean water flow. The Ebro Dam has reduced mean flow by 29%, (Ibanez, 1995), and in Nigeria, the Hadeja River flood plain has been reduced by 300km 2 , (Dugan, 1990). This ability to control the water flow can ensure a reduction in flooding – the Ebro estuary’s last flood was in 1937, (Ibanez, 1995) – and a reduction in droughts – both equally destructive to organisms unable to cope with such drastic fluctuations. • Reduction of river input can reduce the stratification within the estuary, thereby also reducing osmotic stresses upon organisms. • Dams can utilise this water retention by generating cheap renewable energy through hydroelectric power. The Aswan Dam, Egypt, produces 53% of the required power for the whole of Egypt, (Goudie, 1986). This in turn reduces the dependency upon fossil fuels, which can release pollutants into the estuary both aerially and directly. It has been found that were such pollutants abound, hydrocarbon utilising bacteria increase and cellulolytic bacteria decrease, (Crow et al, 1974). DISCUSSION Arguments against river dams have concentrated on the widely publicised failings of specific projects, such as the High Aswan Dam, however many benefits have been overlooked. It is inevitable that any major construction which alters water and sediment flow will have an impact further downstream, but not all changes, from an environmental viewpoint, are bad. Stabilising a habitat will naturally favour some species more than others. The question must be asked; is an unstable habitat supporting varied species, but liable to severe and lethal fluctuations, preferable to a stable one where species can develop and evolve without having to endure unnecessary stresses. Control of sediment flow, and thereby sediment suspension and settling rates, regulation of water flow to avoid stagnation and flooding, and managing of nutrient / pollutant concentrations are all beneficial not only to the organisms inhabiting the estuary, but also to those living around the estuary, and the economic growth and life of the estuary. CONCLUSION It cannot be denied that there have been major environmental implications for estuaries in the past as a result of constructing river dams, however more detailed impact assessments have restricted the negative effects whilst improving the benefits. Whilst dams may help in areas such as sediment dynamics, and to an extent, pollution control, they cannot be expected to negate the problems caused by discharge from domestic and industrial outfalls directly into the estuary. Detailed investigations must therefore be made prior to evaluating the cause of negative alterations within the estuarine environment. From approximately 37,000 listed dams in the ICOLD register, few report major environmental failings, (Razvan, 1992). Proposals for dams now need to prove that they will not compromise the estuarine environment, and should acknowledge and model the expected changes to the coastal physical processes caused by the emplacement of a river dam. The World Commission on Dams is due to publish a report concerning the environmental impact of river dams on estuaries in November 2000, following two years of research. With the understanding gained from reports such as this in place, and knowledge gained from past problems, the potential gain from such constructions cannot automatically be dismissed.

#### Inland waterways are environmentally friendly

European Commission 12 [executive body of the EU, “Inland waterway transport”, 1/6/12, http://ec.europa.eu/transport/inland/index\_en.htm]

Inland waterway transport is a competitive alternative to road and rail transport. In particular; it offers an environment friendly alternative in terms of both energy consumption and noise and gas emissions. Its energy consumption per km/ton of transported goods is approximately 17% of that of road transport and 50% of rail transport. Its noise and gaseous emissions are modest. In addition, inland waterway transport ensures a high degree of safety, in particular when it comes to the transportation of dangerous goods. Finally it contributes to the decongestion of the overloaded road network in densely populated regions.¶ According to recent studies, the total external costs of inland navigation (in terms of accidents, congestion, noise emissions, air pollution and other environmental impacts) are seven times lower than those of road transport.

# \*\*\*Aff Answers\*\*\*

## 2AC A2: Railroads Disad

### Railroads Unsustainable

#### Rising oil prices make the rail industry unsustainable - investing in water now is key

TEMS October 2008 transportation economics & management systems, inc. “IMPACT OF HIGH OIL PRICES ON FREIGHT TRANSPORTATION: MODAL SHIFT POTENTIAL IN FIVE CORRIDORS EXECUTIVE SUMMARY” online http://www.marad.dot.gov/documents/Modal\_Shift\_Study\_-\_Executive\_Summary.pdf

Overall, the impact of recent oil price hikes has created a strong case for investing in waterborne transportation – for both inland and coastal freight distribution. Further increases in oil prices, which would increase fuel costs three- to eight-times over their historical equilibrium levels could make the U.S. transportation environment more like that of Europe in the 1990’s. Historically, coastal and inland water transport has been far more significant in Europe than in the U.S. because of higher European inland rail and truck transport costs that make water cost-effective. The European experience also demonstrates that water-based logistics chains can work effectively, for distributing not only bulk goods and industrial products but consumer goods as well. This could well become the case in the U.S. if the cost differential between the three modes is maintained at the levels reached in 2008 because of much higher fuel prices. In summary, higher oil prices could well promote a significantly enhanced role for water in the U.S. transportation network. This study reveals the potential for such a modal shift in the market attractiveness of waterborne freight transportation. However, this potential can only be recognized if it is supported by public policies that encourage industry and its public partners to invest in the ships, ports, and other infrastructure needed.

#### Railroads will fail now – aging infrastructure, congestion, and capacity - the aff is key to solve the impacts

Colonel Donald E. Jackson, Jr. “Leveraging the Strategic Value of the U.S. Inland Waterway System” 14 March 2007 http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA469583

Railroads provide shippers with cost-effective freight transportation, especially for longdistance trips and heavy and bulky commodities. 9 In 2004, Class I railroads in the United States transported 1.8 billion tons, the highest originating tonnage ever. This record tonnage reflects steady growth in rail traffic for six straight years. U.S. freight trains serve almost every economic sector in the nation, hauling approximately 31.1% of total cargo as measured in ton- miles. Railroads are unique among transportation industry sectors. Railroad infrastructure is privately owned and operated with access limited to the owners of the track. 10 Although the railroad industry is now competitive and productive, railroads are very capital-intensive industries. Railroads are not attracting enough long-term investment, and the freight-rail system may not expand proportionate to economic growth if current trends continue. Unlike most other transportation industries, railroads receive very little subsidy from federal or state governments and rely on their ability to raise necessary capital for maintenance and improvements. U.S. railroads are hauling more freight than ever before and rely more heavily on a shrinking and aging infrastructure. These traffic increases result in capacity constraints and service issues at certain junctions and corridors within the rail network. In fact, excess capacity has disappeared from many critical segments of the national rail system altogether. 11 Failure of the railroad industry to expand exponentially with national economic growth pushes additional freight traffic onto other modes of transport, leading to increased congestion along surface transportation corridors. As our road and rail networks have become increasingly congested and near maximum capacity, we must look to the inland waterway system as a solution. 12 The inland waterway system provides an alternative to overland transportation, reducing congestion plaguing existing road and rail infrastructure. Inland waterways account for approximately 11% of total domestic freight (as measured in ton-miles), third behind road and rail. 13 Principal commodity groups include coal, petroleum, farm products, chemicals and crude materials such as aggregates for construction and other minerals. Total volume ranges around 630 million tons annually, and about 300 million ton-miles. Coal is used to generate over half the electricity produced in the U.S. and the inland waterways transport about 20% of this energy source. 14 The Mississippi River System is the most important commercial navigation corridor, consisting of the Mississippi River and its multiple connecting tributaries. The majority of U.S. navigable rivers and canals are in the eastern half of the country. The Columbia, Sacramento, and San Joaquin Rivers are the only major navigable rivers on the West Coast. The Department of the Army, with the U.S. Army Corps of Engineers (USACE) as its executive agent, has statutory responsibility for operating and maintaining all U.S. navigable waterways, excluding the Saint Lawrence Seaway. The Corps maintains more than 12,000 miles of inland waterways, owning or operating 196 commercially active lock sites with 241 lock chambers for the federal government. These waterways integrate a system of rivers, lakes, and coastal bays improved for commercial and recreational transport. Locks provide the essential infrastructure that allow tows to “stairstep” their way through the system and reach distant inland ports such as Minneapolis, Chicago, and Pittsburgh. 15 Most of the locks supporting the inland waterway system are antiquated and in need of repair, expansion, and modernization. Many of the Corps-owned or operated locks are well past their planned design life of 50 years. Of the locks still in use in the United States, 30 were built in the 19 th Century and another 92 locks are more than 60 years old. 16 Nearly 50% of all Corps-maintained locks were considered to be functionally obsolete by the beginning of 2005. Assuming no new locks are built in the next 20 years, by 2020, another 93 existing locks will be obsolete. This means that 80 percent of locks now in service are beyond their planned design life, casting doubt of the reliability of the system as a whole. The physical condition of the 5 inland waterway infrastructure recently received a grade of D- from the American Society of Civil Engineers (ASCE) in their 2005 Report Card for America’s Infrastructure, released in March 2005. 17 The report highlights the concern that lock condition is declining at the same time waterway usage is increasing. This is a significant challenge facing the inland waterway system, indicative of problems facing other industry sectors as well, casting doubt on the future viability of our national freight transportation system.

### No Link

#### Waterway investment can complement current railway transit

TEMS 2008 [“Impact of High Oil Prices on Freight Transportation: Modal Shift Potential in Five Corridors”, TEMS, October 2008, http://www.marad.dot.gov/documents/Modal\_Shift\_Study\_-\_Executive\_Summary.pdf]

In contrast, expansion of water services would use existing waterways, which have considerable capacity available. For example, the St. Lawrence Seaway (which enables shipping between the Great Lakes and he Atlantic Ocean) has been estimated to be operating at around half (50 percent) of potential capacity in recent years. Therefore, waterborne transportation can compete for intermodal truck freight at distances where rail is not competitive or does not have the capacity to handle more freight traffic. This also implies that water may be able to complement or augment existing rail capacity rather than competing directly with rail in many freight corridors.

#### Waterways consume services that railways are incapable of taking

TEMS 2008 [“Impact of High Oil Prices on Freight Transportation: Modal Shift Potential in Five Corridors”, TEMS, October 2008, http://www.marad.dot.gov/documents/Modal\_Shift\_Study\_-\_Executive\_Summary.pdf]

In the current market, water will tend to move intermodal freight that rail is unable to economically handle. This is especially true for the lower-cost water shipping options such as container on barge (COB). As future trade growth strains rail capacity to its limits, moreover, water may be able to move more cargo that would otherwise move on rail.

#### Waterway out-competes transit time and cost competitiveness of rail services

TEMS 2008 [“Impact of High Oil Prices on Freight Transportation: Modal Shift Potential in Five Corridors”, TEMS, October 2008, http://www.marad.dot.gov/documents/Modal\_Shift\_Study\_-\_Executive\_Summary.pdf]

Previous analysis of large 22-knot inland or coastal RORO vessels (proposed for service on the Great Lakes and St. Lawrence Seaway3) suggest that waterborne transportation can already compete with rail and truck on a transit-time basis and will maintain its cost-competitiveness as fuel prices increase. In the past, COB service has not offered enough cost savings to attract much shipper interest. However, COB service may very well become attractive to shippers if fuel prices rise to levels that make alternative services too costly for low- and medium-value commodities.

### Impact Turn: Global Warming

#### Causes significant emissions – spills over to other forms of transit

Randal O’Toole senior fellow with the Cato Institute April 14, 2008 “Does Rail Transit Save Energy or Reduce Greenhouse Gas Emissions?” http://www.cato.org/pubs/pas/pa-615.pdf

Far from protecting the environment, most rail transit lines use more energy per passenger mile, and many generate more greenhouse gases, than the average passenger automobile. Rail transit provides no guarantee that a city will save energy or meet greenhouse gas targets. While most rail transit uses less energy than buses, rail transit does not operate in a vacuum: transit agencies supplement it with extensive feeder bus operations. Those feeder buses tend to have low ridership, so they have high energy costs and greenhouse gas emissions per passenger mile. The result is that, when new rail transit lines open, the transit systems as a whole can end up consuming more energy, per passenger mile, than they did before. Even where rail transit operations save a little energy, the construction of rail transit lines consumes huge amounts of energy and emits large volumes of greenhouse gases. In most cases, many decades of energy savings would be needed to repay the energy cost of construction. Rail transit attempts to improve the environment by changing people’s behavior so that they drive less. Such behavioral efforts have been far less successful than technical solutions to toxic air pollution and other environmental problems associated with automobiles.

#### Greater demand for rail = more emissions

Texas Transportation Institute “Greening North American Transportation Corridors” 2010 Texas A&M Researchers, Online http://www.cec.org/Storage/86/9508\_QA09-23-Freight\_Corridor\_Report\_en.pdf

This paper presents a case study determining the air related environmental impact, including emissions of criteria pollutants and greenhouse gases, of truck and rail freight movement along a corridor stretching from Mexico City to Montreal. Network and freight activity data were assembled for the corridor for a base case (corresponding to the year 2010) and a future case (corresponding to 2035). Emission rates for the case study were obtained from the US Environmental Protection Agency’s MOBILE6.2 emissions model, using US average parameters such as vehicle age distribution, from vehicle registration data. Rail emissions calculations are based on US average emissions and fuel consumption rates and were revised to reflect the ongoing improvements in locomotive engine standards. The results show that freight movement will continue to cause substantial amounts of carbon dioxide (CO2) emissions. Current levels of rail emissions are not significant relative to the contribution from trucking; proportionally, however, the share of rail emissions for some pollutants will increase over time. This is due to the projected increase in rail freight movement, coupled with a significant reduction in criteria pollutants from trucks as the result of more stringent emission standards and improved engine designs.

#### The worlds reefs are dying

Norm Mineta, Secretary of Commerce, press release, Federal News Service, December 11, **2000**

It really is shocking that two-thirds of the world's reefs may be dying and that 30 percent of the world's reefs are already gone. Now this coral reef crisis is not just something happening far away. It is also happening right here at home. In Florida, for example, some reefs have lost over 95 percent of their coral since 1975. Even under ideal conditions, it would take more than a human lifetime for these reefs to recover. Now we cannot afford to continue to count on coral reefs to support billions of dollars in recreation and tourism while, at the same time, allowing them to be devastated, as Dr. Wilkinson has indicated, by pollution, coastal development, and overfishing. We cannot continue to count on jobs and food from coral reef fisheries while allowing destruction of the habitat that these fish need to feed and to reproduce. And we cannot continue to expect coral reefs to defend coastal communities from pounding waves and storms while allowing the living coral walls to be crushed by boats and anchors.

#### Global warming has devastated coral reefs

Global Australia Impacts Science 9 (Jan 3, <http://www.climateimc.org/en/breaking-news/2009/01/03/coral-reef-and-ocean-biodiversity-threatened-climate-change>) LL

Australian marine scientists have issued a warning on the increasing acidity of the world's oceans and its impact on coral reefs, and through the food web, the productivity and biodiversity of oceans. Scientists at the Australian Institute of Marine Science in Townsville claim that coral on Australia's Great Barrier Reef reached a tipping point in 1990 with coral growth having slowed by more than 14 percent since then. The unprecedented decline has been caused by a combination of rising sea surface temperatures and ocean acidification. At the current rate of decline, coral will be unable to grow by 2050. Reef corals create their hard skeletons from dissolved materials in seawater. As human induced climate change has injected growing amounts of carbon dioxide into the atmosphere, the worlds oceans have absorbed carbon dioxide making them more acidic which effectively reduces the ability of marine organisms to form skeletons. This will effect the whole food chain in the ocean. Dr Glenn De’ath said that the severe and sudden decline in calcification was an unprecedented occurrence in the last 400 years. "The causes of this sharp decline remain unknown, but our study suggests that the combination of increasing temperature stress and ocean acidification may be diminishing the ability of GBR corals to deposit calcium carbonate," he said. "Prior to about 1990 coral growth was fairly consistent but round about 1990 things have change and we're suggesting this is the tipping point. What's happened basically coral calcification, that's a measure of how corals grow, has decreased by about 14 per cent since then. Now we're experiencing growth which is now consistently declining. We estimate roughly, if this rate continues, which is accelerating, then the coral growth will hit zero round about 2050." Dr Glenn De’ath told Australian Broadcasting Corporation radio. The scientists, Dr Glenn De’ath, Dr Janice Lough and Dr Katharina Fabriciu, have published their research in the international journal Science. It is the most comprehensive study to date on calcification rates for corals and include rigorous statistical analyses of annual growth bands from 328 Porites corals from 69 reefs across the length and breadth of the Great Barrier Reef, and extending back in time up to 400 years. "It is cause for extreme concern that such changes are already evident, with the relatively modest climate changes observed to date, in the world’s best protected and managed coral reef ecosystem," said AIMS scientist and co-author Dr Janice Lough. "Coral skeletons form the backbone of reef ecosystems. Their complexity provides the habitat for the tens of thousands of plant and animal species associated with the reef," co-author Dr Katharina Fabricius said. "Skeleton formation also offsets natural erosion and breakage. Previous laboratory experiments and models have predicted that calcification will decline in response to acidification, but here we have shown for the first time that corals are already affected in their natural environment throughout the GBR," Dr Fabricius said. According to the scientists, oceanic pH, the measure of acidity of the ocean, has already dropped by 0.1 and could decrease by 0.4 by the end of this century, due to the oceans absorbing about a third of the extra carbon dioxide (the main greenhouse gas) that humans have put into the atmosphere. If the projected 0.4 decline in pH is correct, this would be "well outside the realms of anything organisms have experienced over hundreds of thousands of years," Dr Lough said. Increased ocean acidity will affect all marine life through food webs leading to precipitous changes in the biodiversity and productivity of the world's oceans, the scientists warn.

#### Multiple alt causes to oceans collapse and recovery from the damage we’ve done so far would take a million years – no timeframe for solvency

All Africa, 2/26/08, “Nigeria: raises alarm over looming global fisheries collapse” allafrica.com

A deadly combination of climate change, over-fishing and pollution could cause the collapse of commercial fish stocks worldwide within decades, said Achim Steiner, head of the United Nations Environment Program (UNEP). Speaking to reporters on Friday in Monaco on the fringes of a climate conference involving more than 150 nations and 100 environment ministers, Steiner said "you overlap all of this and you see you're potentially putting a death nail in the coffin of world fisheries". Some 2.6 billion people worldwide depend on fish for protein, said a UNEP report "In Dead Water" published last Friday. According to a Reuters publication which was displayed on the Environmental News Network website, climate change has compounded previous problems such as over-fishing, as rising temperatures kill coral reefs, threaten tuna spawning grounds, and shift ocean currents and with them the plankton and small fish which underpin ocean food chains. "The question is not whether we should stop fishing but to address climate change, which is creating a degree of impact we've not seen before. We are getting more and more alarming signals of dramatic changes in the oceans. The recovery from the changes we're making will probably take a million years," said Christian Nellemann, lead author of the UNEP report. The report found the most affected areas included those responsible for half the world's fish catch. A slowing of ocean currents as a result of climate change may over the next 100 years interrupt the transport of nutrients to the most valuable coastal fishing zones, and the flushing away of pollution. In other impacts, Nellemann said he expected more than 50 percent of coral reefs to die by 2050 as a result of rising temperatures, with resulting impacts on tourism. Carbon emissions from burning fossil fuels create an acid when dissolved in water, and could over the coming decades make the sea more acidic than at any time in the past 65 million years, and by 2100 could prevent mollusks in some seas from forming shells.

#### AND, More evidence … acidification causes species loss

ENN 07 From: the Center for Biological Diversity Published December 19, 2007 10:49 AM <http://www.enn.com/press_releases/2290/print> Group Petitions EPA to Address Threat of Ocean Acidification accessed online on 4/20/08

The oceans cover about 70 percent of the Earth's surface and absorb about 22 million tons of carbon dioxide each day. Seawater reacts with absorbed carbon dioxide to become more acidic. This process, termed ocean acidification, has many adverse effects, including the impairment of marine organisms' abilities to build protective shells and skeletons. In a new report in the journal Science, scientists predict that if human sources of carbon dioxide continue to increase, ocean acidification coupled with global warming will kill the majority of the world's coral reefs by the end of the century (Hoegh-Guldberg et al. 2007). Already, the pH of the ocean has decreased 0.1 units on average due to anthropogenic carbon dioxide. If carbon dioxide emissions continue unabated, seawater pH may decrease an additional 0.4 units - more than a 100-percent change in acidity.

## 2AC A2: Politics

### Waterways Popular

#### Funding Support for Waterways

PR 12 [Mary Landrieu, U.S. Senator Louisiana, “Landrieu: Louisiana to Receive $22.1 Million in Additional Federal Funding for Waterways”, Press Release, 2/8, <http://landrieu.senate.gov/mediacenter/pressreleases/02-08-2012-03.cfm>]

U.S. Senator Mary L. Landrieu, D-La., announced that the Army Corps of Engineers will provide $22.1 million in additional funding for major waterways in Louisiana. The decision comes after Sen. Landrieu and the Louisiana congressional delegation urged the Corps to provide the necessary investments in underfunded waterway projects in Louisiana.¶ Today’s announcement by the Corps provides $22.1 million for improvements in Louisiana, as well as an additional $13.2 million in funding to be shared by states along the Mississippi River, including Louisiana, Arkansas, Illinois, Kentucky, Mississippi, Missouri and Tennessee. The additional funding comes from money that was appropriated above the President’s budget request in last year’s omnibus appropriations bill and left at the Corps’ discretion.

#### Waterways Plan Popular – Supported by White House

Quinlan 11 [Paul, E&E Reporter, “ARMY CORPS: Industry, Obama admin wrestle over funding for waterway maintenance”, E&E Publishing, LLC, 10/3, <http://www.eenews.net/public/Greenwire/2011/10/03/3>]

President Obama's plan that calls for shipping interests to pick up more of the tab for channel-deepening projects and repairing and upgrading locks and other infrastructure along waterways is facing fierce industry opposition.¶ In the grand scheme of the federal budget, waterways funding is a small matter. Congress' "supercommittee" is tasked with drawing up a plan to cut at least $1.2 trillion in federal spending by Thanksgiving. At issue for inland waterways is $7.6 billion, the industry says.¶ It's unclear just how much of the $1 billion generated under the administration's proposed waterway fees would go toward closing the federal budget gap. Industry lobbyists say the White House has proposed investing $400 million annually in the waterways system, and the administration counted the full $1 billion as deficit reduction in its plan.¶ The waterway proposal in Obama's deficit-reduction plan would generate $1 billion over a decade by charging fees for vessels that use waterways. The proposed two-tier fee -- which would charge the most for users of locks on rivers such as the Ohio, Tennessee and Upper Mississippi -- would supplement revenue raised in an existing 20-cents-a-gallon fuel tax.