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NON-FEDERAL/FEDERAL
COLLABORATORS IN ENDANGERED
SPECIES DRIVEN RIVER RESTORATION:
HOW RISK AND INCENTIVE MOBILIZE
INSTITUTIONAL SUPPLY IN THE MIDDLE
RIO GRAND ENDANGERED SPECIES
COLLABORATIVE PROGRAM

Mark Lawler

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SPECIES COLLABORATIVE PROGRAM**

by

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**B.A. GEOGRAPHY
HUMBOLDT STATE UNIVERSITY
2011**

THESIS

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DEDICATION

For Kate

“You could carry your burdens lightly or with great effort. You could worry about tomorrow or not. You could imagine horrible fates or garland-filled tomorrows. None of it mattered as long as you moved, as long as you did something. Asking why was fine, but it wasn’t action. Nothing brought the rewards of moving, of running.”

-Scott Jurek

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ABSTRACT

The Middle Rio Grande Endangered Species Collaborative Program is an interagency, multiple-stakeholder organization, which works to enable cooperative solutions to endangered species issues on New Mexico's Middle Rio Grande. The Program is a product of what some authors describe as a "new age" of environmental management. This study focuses on how local stakeholders interact with federal and state agencies within the Program to cooperatively invest in institutional changes to solve problems with tools of the "new age" environmental management paradigm. It evaluates these tools in the context of pitfalls presented by dynamic interactions and an imbedded "rule of law" regulatory system and culture. It finds that disparities in influence between

stakeholders who represent common objectives but disagree upon Program trajectories can diminish buy-in among the less influential parties. Less influential stakeholders in these scenarios may feel greater advantage pursuing litigious alternatives that threaten the longevity of the program. Such threats reinforce the “rule of law” status quo which enables guaranteed protections to environmental goods or water rights, but falls short of realistic solutions to the problems of the Middle Rio Grande.

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1. Introduction

The Middle Rio Grande Endangered Species Collaborative Program (“MRGESCP” or “Program”) is an interagency, multiple-stakeholder organization, which came about in the early 2000’s to enable cooperative solutions to endangered species issues on New Mexico’s Middle Rio Grande (MRG) (MRGESCP 2012 *Draft*). The program has attempted, with some success, to bridge political gaps and seek solutions to habitat and flow regime issues present on the MRG. However, it grapples with deeply challenging structural issues that manifest in inefficiency, territorial posturing and confusion over the scientific realities the Program faces. Program participants are divided as to how they expect and desire the future to play out, and they have varying levels of confidence regarding its current trajectory. These factors combined threaten the capabilities of various players to invest in institutional advances.

The Program, which has focused on avoidance of species jeopardy for the Rio Grande Silvery Minnow and Southwestern Willow Flycatcher, is currently attempting to develop a new trajectory toward species recovery. It is simultaneously contending with (1) the pressures of reinitiating the consultation process for a new Biological Opinion (BO) under the Endangered Species Act (ESA or Act), (2) a progressively critical drought situation and (3) continually decreased funding to support the Program. Cooperation and patience are at many times strained, and participants are uncertain as to how the program’s future will play out.

The MRGESCP employs collaborative processes and is developing an adaptive management (AM) protocol for its activities. Both are hallmarks of many of the large-scale river restoration projects currently underway in the U.S. (Freeman 2010). The

program's main catalyst is the ESA, and in employing collaboration and AM, the MRGESCP qualifies as part of what some authors call a "new age" environmental management paradigm that developed out of 1990's effort to transform ESA implementation (Sax 2001, Doremus 2001).

This study focuses on the evolution in environmental management techniques included in this "new age" and how they may be affected by the challenges of collective mobilization of resources and the existing regulatory structure in the context of a specific program. Central to developments is the concept of biodiversity and a focus on habitat restoration and protection in response to what most scientists agree to be an extinction crisis (Sax 2001, Salzman and Thompson 2010). This is reflected in 1990's policy amendments to the ESA and the initiation of multiple large-scale river/ecological restoration programs in the same time period (Doremus 2001, Babbitt 2005, Gerlak 2008).

The "new age" is driven from another direction as well. Implementation of the ESA is no less a social and political issue (Freeman 2010). The ESA is arguably the most powerful environmental statute in the world and with that distinction; it is also one of the most controversial (Salzman and Thompson 2010). The ESA provides only minimal consideration of cost to economies or industry in its designation of species critical habitat. Otherwise it explicitly ignores economic concerns (Ibid.). Many have viewed its neglect of these factors to render its goals impractical and politically unachievable (Doremus 2001). The introduction of collaborative processes and adaptive management in large-scale restoration projects stems in large part from a need to make the ESA flexible and accountable to social, political and economic considerations (Freeman 2010). Effectively, these reforms serve to protect the Act itself from political attack in congress,

but challenge the confidence of Environmental Non-Governmental Organizations (ENGOS) (Ibid.).

Each of the collaborative river restoration programs is unique and heavily influenced by local dynamics. Because of its neglect of economic concerns, the ESA is possibly detrimental to the regulated community (Doremus 2006 from Scott et al. 2006). Therefore, the success of a given program may hinge heavily on local dynamics. This study frames ESA-driven collaborative programs as the product of both regulation and the incentives and interests of stakeholders with a specific focus on the regulated community's interaction in partnership with regulators and action agencies and the resulting structure of risk and incentive. It investigates what factors mobilize these partners to invest in and supply institutions that benefit all partners. This investment is termed "Institutional Supply" by Ostrom (1990). Its successful provision is hindered by the potential for some partners to take advantage of collectively supplied institutions while investing little themselves. The study examines how partners are able to overcome these "second-order collective dilemmas" (free-riding) in the provision of institutions that allow them to avoid jeopardizing and actually aid in species recovery, while also protecting current and future water rights. It uses concepts of institutional change developed in Ostrom (1990) and looks at how well the program has been able to (1) achieve collaboration, (2) whether the incentives for activity are geared toward mutual gains, and (3) achieve protection of species or produce shelter for various parties from regulation and liability. It relies significantly on work conducted by Freeman (2010) with regard to the specific application of Ostrom's theories to another large-scale, ESA driven river restoration program on the Platte River. Finally it focuses on literature regarding the

regulatory system and culture and its affect on collaboration in the MRG. The Program is then assessed regarding how well it meets the challenges of mobilizing investment. The methods being employed in the Program (i.e. collaboration and adaptive management) are evaluated to see whether the factors that are required for successful collaborative implementation of ESA compliance are present and whether this situation is the proper venue for application of the “new age” management paradigm. This study was conducted through the use of observation of group meetings, semi-structured interviews with participants and analysis of program documents.

2. Study Question and Goal

The overarching research question for this study is: what mobilizes or prevents the MRGESCP's partners' or potential partners' investment of time and resources to participate in collaborative, adaptive implementation of the Endangered Species Act?

This study contributes to the understanding of collaborative implementation of the Endangered Species Act on three levels. It provides a case study of a program that has not previously been evaluated under Ostrom's framework of collective mobilization of institutional supply. This is of use as a component of a broader study of stakeholder dynamics in similar large-scale river restoration activities. Its findings can be generalized to evaluate the "new age" methods being employed, as the study demonstrates how local dynamics interact with broader policy goals to either reinforce or call into question the methods of collaboration and adaptive management. On a practical level, the results of this study serve as a critical assessment of the Program, which program partners can use to amend their actions or governance framework to achieve a more successful program.

3. Background

3.1 History of the MRGESCP

The ecology of the MRG has been dramatically altered by human modification of the river and surrounding flood plain (Phillips 2010). Between 36% and 73% of native fish species have been completely eliminated from the river system while over twenty exotic species have been introduced. Exotic vegetation and fish, climate change and progressive growth in water demands will increasingly threaten the native species that exist today (newmexiconaturalhistory.org 2012).

One of the two ESA-listed species, the Rio Grande Silvery Minnow (*Hybognathus amarus*) (minnow) now occupies around 5% of its original range (Ibid). The minnow was listed as endangered in 1994 followed by a migratory bird, the Southwestern Willow Flycatcher (*Empidonax traillii extimus*) (flycatcher) in 1995.¹ Critical habitat was first designated in 1999 and 2003 for the minnow and revised in 2005 for the flycatcher (59 FR 36995, July 20, 1994, codified in 50 CFR §17.11, Federal Register, Volume 60 #38 1995, 64 FR 36274, July 6, 1999).

Drought conditions in 1996 saw the entire flow of the river diverted at the San Acacia diversion dam (Figure 1). This resulted in a significant minnow kill and the initiation of the San Juan-Chama Project (SJCP)² Supplemental Water Operations Program by the Bureau of Reclamation (Reclamation). The critical habitat designation was challenged in court by local conservancy district serving irrigators- the Middle Rio Grande Conservancy District (MRGCD). Meanwhile, environmental non-governmental

¹ For complete description of the ESA and its mechanics including Listing, Critical Habitat, “Take”, Section 7, Biological Opinions (BO) and others see section 3.2 below.

² For complete description of the San Juan-Chama Project see section 3.3 below.

organizations (ENGOs) sued Reclamation and U.S. Army Corps of Engineers (Corps) for failing to consult with the U.S. Fish and Wildlife Service (FWS or Service) under the ESA for their MRG water operations (Kelly 2011). The City of Albuquerque (City)³, MRGCD and Rio Chama Acequia Association all intervened in litigation as claimants of the diversions in question. As a result of this litigation, a court order forced recipients of San Juan Chama Project water to lease water for purposes of sustaining the minnow and for irrigation (Ibid.). Under an agreed order, additional water was pumped from the low-flow conveyance channel north of Elephant Butte Reservoir, the City of Albuquerque's artificial minnow refugium was developed, and support for MRGCD efficiency operations initiated (Ibid).

In 2001, congressional appropriations were authorized for a collaborative program to begin various projects to help the minnow, and FWS issued a three-year Biological Opinion (BO) to cover ongoing actions under the ESA. A second BO was released in 2003 to cover the Program and its partner's activities in the MRG for ten years. In 2004, Congress passed the "minnow rider" which directed the Secretary of the Interior to establish an Executive Committee (EC) and implement a 75/25 federal/ non-federal cost sharing provision. It also specified that SJCP water could only be used for species purposes if leased by Reclamation from willing sellers, and protected action agencies from litigation if compliant with the 2003 BO (H.R. 2754-23§208). In 2009, the EC began efforts to transition the collaborative program to a Recovery Implementation Program (RIP) in order to enhance the focus of the program on recovery. In 2011 the EC agreed to follow an AM protocol for the Program's activities (MRGESCP 2012 *Draft*).

³ The City of Albuquerque's municipal water supply is now managed by the Albuquerque/Bernalillo County Water Utility Authority (ABCWUA or Authority), a separate entity and signatory created since the original litigation.

Currently, the Program suffers from the cumulative effects of pressures it faces in the run up to the expiration of the 2003 BO. Specifically, the timeline for completion of the RIP documentation has been overrun and consequently will not initially be included in the 2013 BO. Details regarding the development of RIP at issue include: controversy regarding structural changes such as third-party management of the RIP, and a lack of clarity regarding how the FWS will gauge sufficient progress of regulated partners under the RIP. This has spurred a game of “chicken” in which partners, action agencies and the FWS all appear to want another party to make the first commitment. At the same time, a rift has grown between the two action agencies, the Corps and Reclamation over whether to implement a joint consultation with FWS. Cumulatively, the effect has been to overrun the deadline for completion of the new BO in early 2013. This rescheduling has created a seven-month opening before completion of the 2013 BO in which the minnow rider’s protection against litigation is no longer valid.

Currently, the program has invoked language in the 2003 BO to extend ESA coverage during resolution of the above stated issues. Interviews and observations of EC meetings reveal a general mood of frustration and wariness among many partners as the above mentioned protection from litigation expires on March 16, 2013.

3.2 Complexities of Regulated Rivers

Challenges to watershed management include the regulated factors of clean water and air, endangered species, irrigated agriculture and land use management at the federal and state level. Each western state has similar yet diverse allocation laws for surface water and ground water. Each phenomenon is administered by different agencies at federal, state and tribal levels (Gillon 2002).

3.2.1 The ESA and other relevant regulatory structures

The federal ESA is a key factor in most of the collaborative river governance programs in the U.S. (Karkainen 2002). The ESA is summarized by Benson (2010): Section 4 of the ESA requires the FWS or National Marine Fisheries Service (NMFS) to list threatened or endangered species. Once a species is listed, a number of protections immediately fall into place. It becomes illegal to “take” a listed species, with limited exceptions.⁴ The term “take” is broadly defined to include any actions that harm the species, including “habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering” (50 CFR § 17.3). Listing also triggers the requirement that the appropriate wildlife agency designate critical habitat for the species either concurrently with the listing of the species or within one year of listing. Critical habitat designation becomes important in large part because the proposed adverse modification of critical habitat triggers the ESA’s consultation requirement. Under Section 7 of the ESA, all federal agencies are required to consult with the appropriate wildlife agency to ensure that their actions are not likely to jeopardize the continued existence of listed species or result in destruction or adverse modification of critical habitat. The consultation process applies to all federal actions, broadly interpreted by the courts to include not only direct construction projects but also the granting of licenses and contracts and the promulgation of regulations (Sullins 2001). Once an action agency determines that its proposed activity “may affect and is likely to affect” the species, the wildlife agency issues a BO, which includes an analysis of whether the proposed action is “likely to jeopardize the

⁴ Prohibition Against “Take”;ESA Section 9 (16 U.S. C. § 1540) It is illegal to “take” a listed species without a permit under Sections 7 or 10. Seldom enforced against private parties due to burden of proof issues—must show “actual injury” to listed species.

continued existence of the species or adversely modify designated critical habitat.” (16 U.S. C. § 1536) If a jeopardy determination is made, the BO identifies any “reasonable and prudent alternatives” (RPAs) that would allow the action agency to move forward with the proposed activity. A BO includes an “Incidental Take Statement,” anticipating that some take of species may result from the proposed project. The Incidental Take Statement outlines terms and conditions designed to reduce the impact of the anticipated “take” that are binding on the action agency (USFWS 2007).

The Clean Water Act (CWA) sets about to “restore and maintain the chemical, physical and biological integrity of the nation’s waters”, prohibits “Discharge of toxic pollutants,” provides for “water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on water.” The Environmental Protection Agency (EPA) accomplishes this by setting effluent limits based on technology and economics for hundreds of pollutants for categories of dischargers with state determined ambient water quality levels for receiving waters (Gillon 2002).

The National Environmental Policy Act (NEPA) forces agencies to produce an Environmental Impact Statement for any federal action that may impair the environment. Counsel on Environmental Quality (CEQ) regulations call on federal agencies to “Rigorously explore and objectively evaluate all reasonable alternatives to the proposed actions and devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits...include the alternative of no action and include appropriate mitigation measures not already included in the proposed action or alternatives.” The environmental consequences of this section

of the EIS “forms the scientific and analytic basis” for the comparison of alternatives. Once an action is deemed to have a significant impact, mitigation measures must be developed where feasible (Ibid.)

Most western states water allocation systems are based on some version of the prior appropriation system. The system at its core allocates rights to appropriators to make beneficial use of water diverted from a watercourse. Senior (prior) appropriators have the better right and if “relation back” and continuous use can be proven, the date of intent to appropriate, or application for permit, stands as the date of appropriation. During shortages, junior users are cutoff and all parties’ rights must be exercised continuously to avoid forfeiture. However, each state’s water rights will be variously adjudicated or not and different systems of delivery and administration will exist depending on how special districts interact with state law and federal water management agencies (Tarlock et al 2009).

Each major river will have a “Law of the River” that embodies the products of decades of litigation and negotiation among the river’s users. Among these are interstate compacts, which are agreed between states and enacted by congress (Tarlock et al 2009, Gillon 2002). Federal and State laws mentioned already, international treaties and Indian water rights are included as well as vestiges of indigenous culture and Spanish and Mexican laws and grants (Gillon 2002).

3.2.2 Agency Overlap and sharing of responsibility

The existence of so many regulatory components in river management means that multiple agencies, each responsible for a small portion of the responsibility for river governance will interact at all levels of government. At the federal level, Reclamation

maintains dams and diversion structures and irrigation works administering water delivery for various contracted recipients and individuals with state-permitted water rights. It is the nation's largest wholesaler of water and second largest producer of hydroelectricity (Susskind et al 2010). The Corps, manages projects, maintains navigation channels, and operates and maintains reservoirs and levees to control floods. It also manages hydroelectric power generation. FWS and NMFS administer the ESA and the Fish and Wildlife Coordination Act to protect fish and wildlife not listed under the ESA whose survival may be jeopardized by federal actions. The CWA requires EPA to set water quality standards for and control discharges into surface waters. State agencies may also exist to administer a state's duties under interstate compacts and municipal and tribal governments, and special districts may each have responsibility for management of the same water as it travels from purpose to purpose (Gillon 2002).

3.3 The Middle Rio Grande Management Context

Specific to the MRG are several factors of importance to specific stakeholders' roles. These include the SJCP, the Rio Grande Compact (Compact), Tribal Trust obligations of federal agencies, and Prior and Paramount (P&P) water rights.

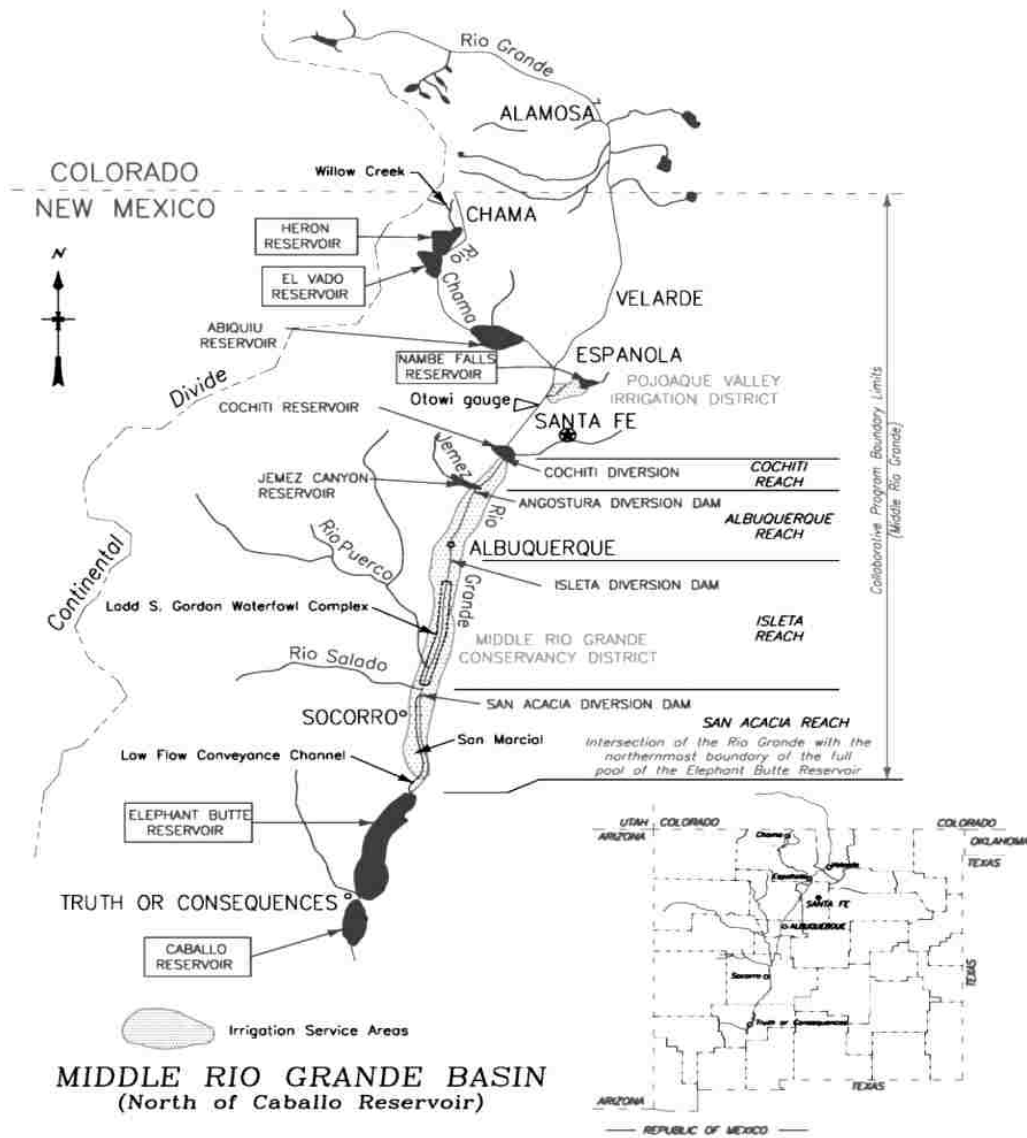


Figure 1: Spatial Distribution of Relevant Locations and Activities (MRGESCP, 2012)

3.3.1 The San Juan Chama Project

Reclamation offers this description of the SJCP: The San Juan-Chama Project consists of a system of diversion structures and tunnels for trans-mountain movement of water from the San Juan River Basin to the Rio Grande Basin. Authorized as a participating project of the Colorado River Storage Project, the San Juan-Chama Project provides an average annual diversion of about 110,000 acre-feet of water from the upper tributaries of the San Juan River. Primary purposes of the San Juan-Chama Project are to furnish a water supply to the middle Rio Grande Valley for municipal, domestic, and industrial uses. The project is also authorized to provide supplemental irrigation water and incidental recreation and fish and wildlife benefits. Water is supplied for the following municipal, domestic, and industrial purposes: city of Albuquerque, 48,200 acre-feet; city and county of Santa Fe, 5,605 acre-feet; city of Los Alamos, 1,200 acre-feet; village of Los Lunas, 400 acre-feet; Twining Water and Sanitation District, 15 acre-feet; city of Espanola, 1,000 acre-feet; village of Taos, 400 acre-feet; town of Belen, 500 acre-feet; town of Benalillo, 400 acre-feet; and Jicarilla Apaches, 6,500 acre-feet. Supplemental water is provided for irrigation of 89,711 acres in the Middle Rio Grande Conservancy District, 20,900 acre-feet; and 2,768 acres in the Pojoaque Valley Irrigation District, 1,030 acre-feet. An annual allocation of about 5,000 acre-feet is available for the Corps of Engineer's Cochiti Reservoir for fish and wildlife and recreation purposes to maintain a minimum pool of 1,200 surface acres. There is an allocated but as yet uncontracted supply of 4,990 acre-feet (U.S. Bureau of Reclamation, 2013).

3.3.2 The Rio Grande Compact

Signed in 1938, with Colorado, New Mexico, and Texas as parties and approved by Congress in 1939, the Rio Grande Compact apportions the waters of the Rio Grande above Ft. Quitman, Texas, among the three states. It provides for administration by a commission consisting of the state engineers of Colorado and New Mexico, a commissioner appointed by the Governor of Texas, and a representative of the United States. The commission meets annually in March. The Rio Grande Compact establishes water delivery obligations and depletion entitlements for Colorado and New Mexico. Given the variable climate, it provides for debits and credits to be carried over from year to year until extinguished under provisions of the compact.

Accrued credits or debits are an important element of compact accounting. The engineer advisors to the compact commissioners meet prior to the Rio Grande Compact Commission to determine scheduled and actual delivery of water under the compact. The U.S. Geological Survey acts as Secretary to the compact commission under an annual cooperative agreement, prepares monthly and annual reports, and maintains the official compact commission files (NMISC 2013).

In recent years the State of New Mexico has been accumulating credit “surpluses” due in part to the construction of more efficient channels into Elephant Butte, but primarily the fact that there have not been big water years. This seems counter intuitive but is based in proportion of water lost in carriage (carriage losses to infiltration and evapo-transpiration) between high versus low water years. New Mexico’s maximum allocation is 405 thousand acre-feet (kaf) in the MRG and everything above that has to be delivered. A portion of the water gets lost in the system, but New Mexico’s full obligation to Texas is still due. Losses are made up for by accruing debits (Interview).

New Mexico has to deliver a smaller percentage of flows experienced in smaller water years. Carriage losses for this smaller percentage are proportionally small enough that it is more likely to over-deliver in low flow years and under-deliver in high flow years. In a bigger water year, the carriage losses in the system are proportionally so large that New Mexico loses everything and has to subtract its own local inflows and deliver them to Texas. Bigger water years create debits in New Mexico's compact accounting; smaller water years create credits (Ibid.).

The State can also, over time, accumulate surpluses. Article 7 of the Compact also commonly applies to low flow years. Article 7 dictates that if there is less than 400 kaf of water usable for the Rio Grande Project stored in Elephant Butte and Caballo reservoirs, New Mexico is prohibited from storing any water in upstream reservoirs that were constructed after 1929. Under those restrictions the snowmelt runoff must be allowed run through the system to get to Elephant Butte. An exception to this rule states that, if New Mexico has a credit surplus at Elephant Butte, it can relinquish that surplus to (hydrologic) Texas (Elephant Butte Irrigation District in New Mexico and El Paso One in Texas). New Mexico may then store that equal amount in its upstream reservoirs over time as a means of making it available for use in the MRG. New Mexico has been distributing its accrued surplus allocation of storage and release rights primarily to the MRGCD, to some degree to municipalities, and leasing that water to Reclamation (Ibid.).

3.3.3 Pueblo water rights and Tribal Trust Obligations

“The (New Mexico) Pueblos' water rights are based upon laws spanning hundreds of years and several crowns” (Mann 2007 pp.1). Having “distinguished the Pueblo tribes, who lived in concentrated village settlements, from the Navajo and Apache, who were

nomadic,” the Spanish “recognized and protected Pueblo land holdings and water rights” (Ibid). “In 1848, the United States acquired the New Mexico Territory, and the Treaty of Guadalupe Hidalgo guaranteed the Pueblos' property rights acquired under the Spanish and Mexican governments” (Ibid.). “In 1924, Congress passed the "Pueblo Lands Act"” in which “the United States government acknowledged a trust relationship between it and the Pueblos” (Ibid.). “Congress protected the Six Middle Rio Grande Pueblos’ "prior and paramount" (P&P) right to the water necessary to irrigate their 8,346 acres of historically irrigated land (the Secretary of the Interior later increased this to 8,847 acres) within the boundaries of the MRGCD and 15,000 acres (later reduced to 11,074.40) of Pueblo land that could be "newly reclaimed" by the Conservancy Project. However, even today the full extent of the Six Pueblos' water rights has yet to be determined.” (Ibid.).

3.3.4 Roles of Signatories to the MRGESCP

The MRGESCP combines sixteen signatory partner entities in a collaborative body meant to facilitate shared responsibility for management of MRG endangered species and various water uses. Most entities have both mandatory agency and Program related duties that affect their roles within the program. These roles are summarized as follows:

Table 1: Roles of Program Signatories

<p>FWS</p>	<ul style="list-style-type: none"> • Only Federal Regulatory Agency Signatory to the MRGESCP • Charged with Administration of the ESA and Section 7 Consultation <ul style="list-style-type: none"> ◦ Develops BO and makes finding of jeopardy/non-jeopardy ◦ Develops RPA's in consultation with action agencies • Main scientific entity in program <ul style="list-style-type: none"> ◦ Ascertains species health and effects of agency action • Dual role as partner and regulator simultaneously <ul style="list-style-type: none"> ◦ Facilitates permitting for various Program activities (research/restoration) ◦ Regulates compliance ◦ Final authority on all Program activities • Role deviates from classic ESA administration model in that the agency is partnered with agencies, municipalities, the quasi-public special district, tribes, and NGOs (APA, potentially Environmental)
<p>Reclamation</p>	<ul style="list-style-type: none"> • Lead federal action agency in ESA Section 7 Consultations • Critical source of funding to MRGESCP <ul style="list-style-type: none"> ◦ Contributes personnel including Federal Chair Person and staff ◦ Secures grant funds for restoration and Program Functions ◦ Leases water from willing sellers of SJCP water and Compact Credits • Provides water in Western U.S. to contracted recipients of federal projects <ul style="list-style-type: none"> ◦ Water provision role integrally ties its activities to those of other water users ◦ Holds title to MRGCD works including El Vado Dam (MRGCD not a federal project) ◦ Does not hold discretion over MRGCD activities ◦ Operates SJCP which distributes project water to municipalities and agricultural interests.
<p>Corps</p>	<ul style="list-style-type: none"> • Second Federal Action Agency in ESA Consultation • 2003 BO focused on Corps dam operations <ul style="list-style-type: none"> ◦ RPA's required Corps to participate in habitat restoration under its various other authorities. • Corps manages waters of the MRG, Rio Chama, and other tributaries for flood control ("controls floodgates") <ul style="list-style-type: none"> ◦ Standard operations require impounding of water at Cochiti Dam only when safe channel capacity is exceeded ◦ Safe channel capacity at Albuquerque is 7000 cfs • (Cochiti Deviation) Corps may deviate from standard ops to provide water for species management if water is made available to do so by another water right holding entity. <ul style="list-style-type: none"> ◦ Corps has no water rights and no duty to deliver water for irrigation or municipal use.

<p style="text-align: center;">MRGCD</p>	<ul style="list-style-type: none"> • Major non-federal actor in MRGESCP <ul style="list-style-type: none"> o Original litigant in minnow litigation, activities strongly effect species o Has water and other assets • Formed in 1923 to administer flood control, drainage and delivery <ul style="list-style-type: none"> o Enabled by state law o Quasi-public entity can tax residents of benefitted area o Not subject to NEPA compliance as are federal agencies o Consolidated original MRG diversion points to four which increased efficiency while making assessment payer’s dependent on system. • MRGCD provides water for various Program needs and participates in various work groups <ul style="list-style-type: none"> o Water rights are held by Assessment Payers o MRGCD receives some SJCP water which it can lease
<p style="text-align: center;">ABCWUA</p>	<ul style="list-style-type: none"> • The Authority is another important stakeholder in the MRGESCP• It is the largest provider of municipal water in the state <ul style="list-style-type: none"> o It serves Bernalillo County and the City of Albuquerque o It is the largest user of SJCP water and leases a portion of that water to Reclamation for Program purposes• The Authority’s role in the program is cooperative, supplying or timing water releases with species needs according to FWS. • The Authority has its own ESA coverage under the SJCP BO.
<p style="text-align: center;">ISC</p>	<ul style="list-style-type: none"> • (New Mexico Interstate Stream Commission) is another important stakeholder in the Program <ul style="list-style-type: none"> o ISC is responsible for New Mexico’s obligations under the Rio Grande Compact. o Were one of the Interveners in the original minnow litigation • ISC has ability to obtain funds from the state legislature and has ongoing working relationship with Reclamation in maintenance of pilot channel into Elephant Butte Reservoir • As a program partner the ISC has created habitat and artificial refugia for the silvery minnow and worked with MRGCD to improve efficiency. • It serves as a prodding influence on Reclamation to increase productivity.
<p style="text-align: center;">APA</p>	<ul style="list-style-type: none"> • (Assessment Payers Association of the MRGCD) An organization that represents (approx. 600) assessment paying irrigators and residents of the benefitted area of the MRGCD <ul style="list-style-type: none"> o Formed in the 1970’s as a watchdog organization over the MRGCD in attempt to constrain rate increases proposed by the district o Irrigators’ livelihoods are directly threatened by limitations the ESA may impose on their water use.

<p style="text-align: center;">Pueblos</p>	<ul style="list-style-type: none"> • Four MRG Pueblos are signatory to the MRGESCP <ul style="list-style-type: none"> ◦ Pueblos hold the most senior water rights in the system (See Prior and Paramount water rights (P&P) description in body of text) ◦ Pueblos role in the Program has been representative of Tribal interests and substantive in the way of habitat restoration • P&P water rights are guaranteed safe from Compact necessities and Tribes retain the right to future development of those rights <ul style="list-style-type: none"> ◦ 2003 BO acknowledges that shortages may occur in the future due to rights of development ◦ FWS believes that nothing in the 2003 BO impairs use of Tribal waters but admits of possibility of infringement on Tribal Trust duties of action agencies ◦ 2003 BO also notes that Tribes do not concede that the ESA applies to their actions
<p style="text-align: center;">City</p>	<ul style="list-style-type: none"> • Has representative and substantive roles in the MRGESCP <ul style="list-style-type: none"> ◦ The City represents nearly 600,000 constituents ◦ It manages 2,500 acres of open space in the Rio Grande Bosque ◦ It originally represented Albuquerque’s water use before the formation of the ABCWUA ◦ The City’s activities have a minimal need for ESA coverage • The City receives Program funding to participate in habitat restoration and run the Bio-Park rearing facility (minnow hatchery) that contributes to the Program’s population augmentation program.
<p style="text-align: center;">Environmental NGOs</p>	<ul style="list-style-type: none"> • Have played a crucial role in the development of the MRGESCP though they are not currently signatories to the Program <ul style="list-style-type: none"> ◦ As important members of the early stages of the collaborative process they were involved in drafting long term solutions to species problems. • Litigation brought by these NGOs forced federal actions, started the consultation process and eventually prompted congress to establish the official collaborative program. • NGOs left the collaborative table as the Program evolved into a more “hardened, federal-like bureaucratic” structure. Calculations of NGO effectiveness, given limited resources, in the “biased” collaborative forum caused NGOs to believe that their goals were not practically attainable from within the Program.

4. Literature Review

This study depends upon the concept of institutional supply and its provision developed in Ostrom (1990). Institutional supply is a component of collective action that refers to provision of and investment in institutions for governance used in evaluating the management of common pool resources (CPRs) or resources shared as a commons among multiple dependent parties. Many of the principles involved in evaluating management of CPRs are applicable to collaborative processes being implemented in modern “new age” river restoration programs (Freeman 2010). The relevance of application of these principles is strongly influenced by the structure of the program and how it fits with the regulatory system in place. In the case of water resources and endangered species, applying collective action and the CPR lens is complicated because, while a public resource, water in the Western United States is managed under a well-developed system of private usufructuary rights protected under state law. Demands of the federal ESA and agency mandates further confine options developed in a collaborative forum. Complicated as application of this lens is, Ostrom’s questions for evaluating institutional supply investment do attend directly to existence of peripheral regulatory structures (Ostrom 1990). One question here may be to what extent the regulatory system is peripheral to the resource management taking place.

While emphasized in the modern management paradigm, collaboration can be hindered or advanced by both the regulatory system and the social-political situations of those involved. This literature review will dissect these various factors beginning with the theoretical and political reasons for shifting from a strict command-and-control regulatory model to collaborative processes and adaptive management. Institutional

supply and stakeholder investment mobilization will then be discussed followed by a study of the interaction between collaborative processes and the regulatory system and culture.

4.1 The “New Age” of Environmental Management

The combination of social and economic concerns and the impending realities of an uncertain biological and climatic future have led to an academic dialogue concerning how to protect bio-diversity, increase social and ecological resilience and increase the ability of social/ecological systems to adapt to disturbance or systemic change. These must all be integrated into policy and paradigm if effective management will be possible (Chapin et al 2009, Chap.1).

In broad perspective, the reasoning behind this dialogue is threefold. Biodiversity is in crisis and thus the building blocks of human society are in jeopardy (Sax 2001). The concept of stationarity⁵, on which water management planning is based, is nullified by climate change and with that, our perceptions of adaptive capacity are in need of re-consideration (Milly et al. 2008, Craig 2009). Finally, intra-disciplinary foci in social sciences and ecology don't adequately intersect human activities within ecology and thus limit development of effective management solutions to the intensive environmental degradation currently taking place (Liu et. Al 2007, Ostrom 2009).

These factors of extinction, adaptive capacity and human/ecological relationship are broadly attended by the concept of resilience based stewardship which enables managers [and planners] “to respond to and shape change in social-ecological systems

⁵ The concept that future probabilities of flood and drought cycles can be derived from the instrument record (Milly et al. 2008).

(SES) in order to sustain the supply and opportunities for use of ecosystem services by society” (Chapin et al. 2009 *pp.*29).

To take the three issues above individually, the emerging inability of planners and engineers to predict future conditions based on probabilities derived from instrument records (stationarity) is mitigated by increasing and enabling a SES’s ability to adapt to various system disturbances or systemic changes. The concept of adaptive management (AM) arises from this perspective. AM is a multi-step, iterative process for conducting scientific study of management actions by the implementation and rigorous monitoring of hypothetically developed management action scenarios (Williams, Szaro and Shapiro 2009, Smith 2011). The goal is to be flexible in management when new information is acquired or systems change. AM is a hallmark of many large-scale river restoration programs including, tentatively the MRGESCP.

It is also advocated that restoration and preservation be re-conceptualized to advance the idea that baseline conditions are and have always been dynamic (Craig 2009). Restoration should be a function of relieving human constraints to allow systems to develop their own balance based on current conditions (C.A. Frissell and S.C. Ralph from Naiman and Bilby 1998).

The factors of biodiversity loss and the coupling of human systems with ecological systems are interdependent within this study’s concern with the ESA. Social and ecological sciences have tended to focus on intra-disciplinary subject matter to the extent that human systems and ecological systems are inadvertently rendered conceptually distinct (Liu et Al 2007). Where this distinction has influenced policy, the substantive result is insufficient for effective conservation. The “enclave” theory: *that*

conservation goals can be achieved by the separation of resources to be preserved and resources to be harnessed for economic gain has failed in achieving meaningful biodiversity protection because biodiversity must be protected where it is found. This is often on or in economically viable resources (Sax 2001). The ESA as written fails to account for social and economic considerations when enforcing protections for endangered species and has thus sparked controversies that can delay and potentially harm endangered species further (Echeverria 2001).

A modern means of attending to the reconciliation of human economic and social systems with the needs of biodiversity is through the implementation of collaborative processes (Freeman 2010). Bringing the representatives of all the various interests (including those of species) to one table to develop comprehensive, politically legitimate, and ecologically viable solutions is problem solving that in theory better represents the true impact of human systems on ecological systems and vice versa (Freeman 2010, Burger 2011). Collaboration and stakeholder engagement increases effectiveness of the negotiated result, develops institutions that bridge public and private interests as well as jurisdictional boundaries, and brings parties not formerly involved in ecological management into a stewardship role (Burger 2011, Ostrom 1990, Gerlak 2008, Freeman 2010). Partners in collaboration are able to engage in a broader role than previously occupied and engage in a process of relationship building and group learning that increases the group's ability to effectively manage the resource in question (Pahl-Wostl 2007).

Other equally important motivations for the same “new age” management activities in ESA implementation address what the Clinton Department of the Interior

perceived as the politically unachievable goals of the ESA as written (Doremus 2001). Attacks on the ESA in congress and focused resistance from the regulated community prompted Clinton's Secretary of Interior to envision collaborative methods as a way of making the ESA more flexible (Echeverria 2001). This has allowed consideration of important economic factors. However, problems with the model exist. Many environmental constituencies have been critical of what they view as shifting emphasis too heavily toward resource appropriators' interests in scenarios where it seems obvious that species are paying the higher price, that of likely extinction (Ibid). The true danger of ESA repeal in congress or political risk that arises out of strict ESA enforcement is potentially over-emphasized by implementing agencies that are predisposed to succumb to focused political pressure (Doremus 2001). Collaboration and adaptive management (as alternative to hard decisions) have been used effectively to delay substantive action toward species recovery (Freeman 2010). The negotiated nature of collaborative programs and lack of standardization and unclear legal requirements for adaptive management have been seen to promote sluggish if not ineffective conservation activity (Echeverria 2001, Nie and Schultz 2011, Ruhl and Fischman 2010).

4.2 Mobilization of Partner Investment in Institutional Supply

Parties in a collaborative process are faced with numerous obstacles including the potential that all parties may benefit by the process though not all may fairly contribute (Ostrom 1990). The concept of institutional supply and Ostrom's questions for evaluating a given organization's potentials are employed to better understand the dynamics of the MRGESCP.

The ESA creates a crisis for the status quo operation of resource appropriators whose activities or reliance on federal agency activities, jeopardize endangered species (Freeman 2010). As the impetus for collaborative solutions to this crisis, ESA compliance creates a superordinate goal for the parties involved. A superordinate goal is a goal, shared by parties who may otherwise be adversaries but are allied because it can only be achieved by the collective efforts of the parties and because without its achievement, all parties would suffer (Sherif 1958 from Poitras et al. 2003). Because however, the immediacy of the threat that the ESA imposes is diffused by the collaborative process, it is possible for participants to engage in a manner that delays or stifles action. This can be beneficial to the necessary process of coalition building if all parties will be burdened by eventual failure of collaboration to the point that solutions are forced in the collaborative forum. If, however, one or more of the parties is not sufficiently burdened by the potential failure of collaboration and has sufficient time and financial resources to wait out the collaborative process, then the process is jeopardized (Freeman 2010). If parties are sufficiently compelled to participate in the process, they will do so with varying levels of investment based on their interests, incentives or capabilities.

The development of collaborative institutions is functionally the development of new public goods that benefit all parties to the collaboration regardless of their particular contribution. For this reason, the same potential for “free riding” exists with regard to the collaboratively developed institution as exists with the actual resource commons the institution was developed to administer. This is known as a second-order collective dilemma (Bates 1988, p 395 from Ostrom 1990). The ability of stakeholders to address this dilemma is greatly influenced by the variables specific to their issue and organization

(Ostrom 1990). Issues are numerous and these questions are used in the discussion to evaluate the MRGESCP.

- How many participants were involved?
- What was their internal group structure?
- Who initiated action?
- Who paid the costs of entrepreneurial activities?
- What kind of information did participants have about their situations?
- What were the risks and exposures of various participants?
- What broader institutions did participants use in establishing new rules?

Answering these questions allows analysis of obstacles, both internal and external and discount rates associated with individual stakeholders' position. Discount rate was a relevant factor in relationships within the MRGESCP. Three factors of discount rate are applicable. (1) Humans commonly emphasize potential losses over potential gains and (2) immediate results (especially costs over gains) over extended results. This may influence the level to which individuals discount certain potential benefits to collaboration. (3) Individuals with direct and exclusive dependence on a CPR or collaborative institution, especially those subject to norms and customs of a resource dependent community will place higher value on its management (Ibid.). This last element is the one most applicable to the Program and is used to analyze statements in Chapter 6.5.

An incremental approach to institutional change is necessary (Ibid.).

Conceptualizing the “origins” of new institutions in a context of “changes” to old institutions allows partners the perception of lower cost for provision of institutions. For instance, if partners working within an existing framework can loosen constraints to

make small alterations that more effectively combat the problems they face, they may be able to achieve a small collaborative success. They can then increasingly invest over time as they can test and benefit from aspects of incremental reforms. This may relieve the expectation of the high cost of completely scrapping or reforming an existing institution that may seem a more secure path than something totally new (Ibid.). Small, good faith investments can succeed in establishing grounds for future trust and cooperation even in light of game and other theories that predict incentive to develop wholly on the prospect of prolonged engagement, coercion, or sanction. This is because they are a form of communication, a soft behavior that enables reciprocity among players (Ostrom 1990, Axelrod 1984, Bates 1988). It is more likely that this mode of investment will result in long-term benefit for all parties proceeding in this fashion. Stronger relationships will be formed and potential for social learning and substantive advances in management effectiveness will be more likely to develop (Fisher and Brown 1988).

In negotiations, being able to invent options for mutual gains can allow either side in a contentious arrangement to see more latitude for improving their situation beyond just the options that initially or traditionally occur to the parties involved (Fisher and Ury 1981). It is advantageous for parties to “expand the pie” and realize the creation of an other-than-zero sum game. The operation of expanding the pie is dynamic and influenced heavily by those involved and their ability to make a process of the operation. Prematurely critical tendencies among parties can diminish the diversity of potential options. The conception that a single answer to a given problem or set of problems exists also limits the creativity allowed in envisioning a more progressive and mutually gainful set of options. In addition it is common for members of a party to assume that they are

negotiating a fixed sum and thus preclude any creative expansion of options available. Finally, the tendency exists for parties to remain adversarial in the envisioning of options for a more holistically gainful program. In this sense, individuals may create barriers to effective incentive building by assuming that they have no responsibility for understanding the needs of the other side and thus short-change themselves and the process as a whole when it comes to securing cooperative agreement by process of incentive building (Ibid.).

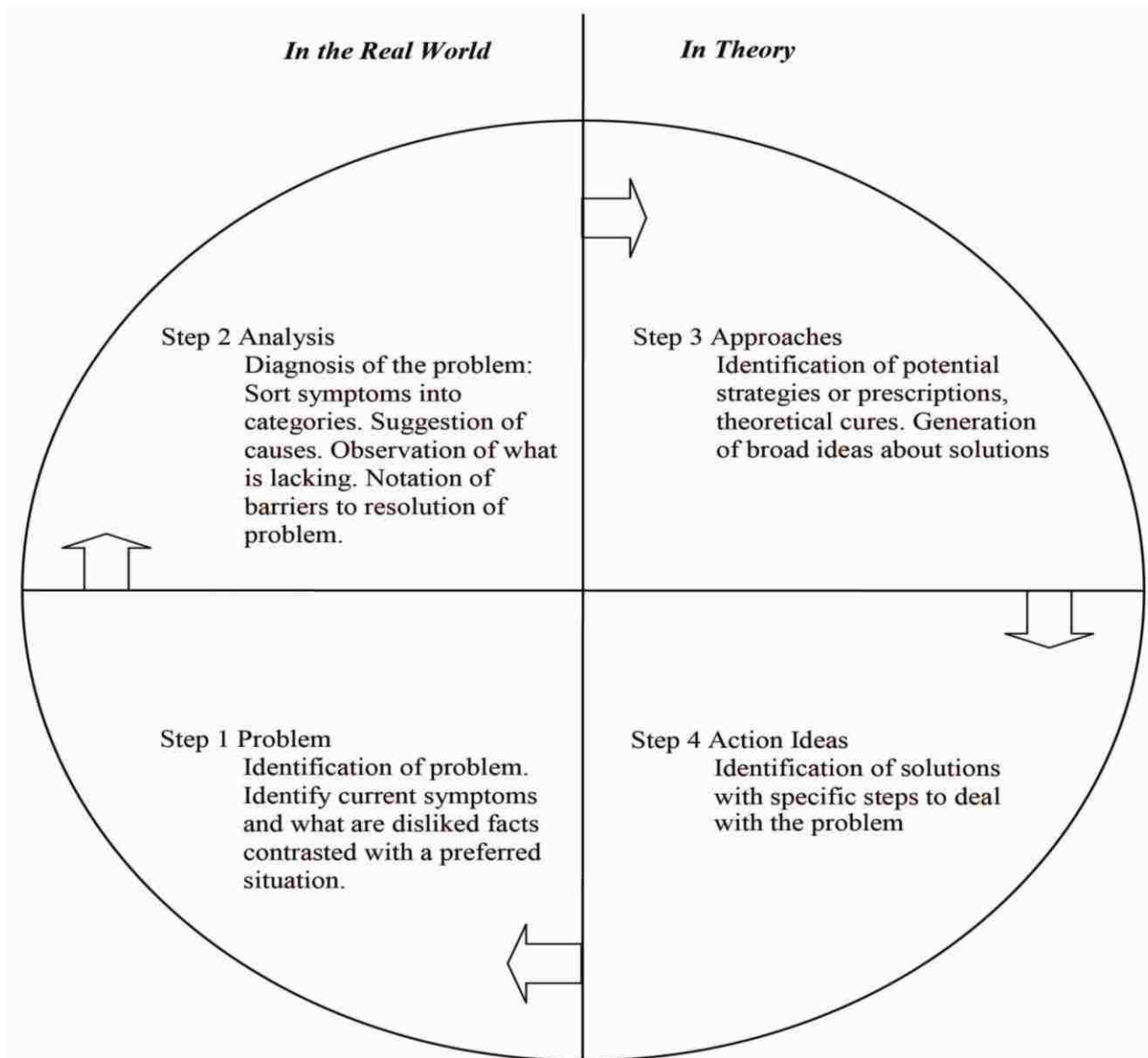


Figure 2: Incentive Building Negotiation

A group's ability to undertake the incentive-options building process can be evaluated graphically by comparing dynamics to a circle chart that illustrates what Fisher and Ury view as the necessary 4 modes of thinking to develop a sufficiently diverse array of options. (Adapted from Fisher and Ury 1981)

The quality of collaboration can thus benefit from (1) a group's ability to make an intentional process of the operation by separating inventing from actual decision-making regarding options, (2) assuming that "room" must be developed in the number of options available for negotiation and (3) realizing that the end product likely contains more options than parties came to the table believing existed. Finally, if all sides of a negotiation are able to place themselves in each other's shoes, the conception that each party's self-interest is best served by taking responsibility for a properly negotiated agreement can focus incentive building. This contrasts with a situation where parties adhere to the status quo and expect the other side to solve its own problems (Ibid.).

In the development of collaborative processes, it is likely that most parties will perceive some benefit to participating in consensus building. This can be enough to motivate participation or can be a step in pulling parties to the table when a lack of trust or history of confrontation is present. Poitras et al. (2003) argue that the "appeal of collaboration" was an intermediate variable between interactions in which collaboration seemed impossible for reasons of mistrust and interactions that were more straightforward. They identify that mistrust can create a "reactive devaluation" of the benefits of collaboration and that simultaneously benefits can be used to incentivize the process of conflict analysis that can lead to collaboration. In this model the benefits of collaboration are related to the concept of the superordinate goal (Poitras et al. 2003).

Because the specific scenarios of focus in this study are driven by the potential for exogenous sanction, development of cooperative relationships will depend on the length of time partners collaborate. Freeman (2010) points to necessary periods of "regulatory

cruising”, or “stretching” the regulatory system to delay investment, as necessary to coalition building within various scales in the collaborative venture. He finds that mid-level organizations, not directly subject to state or federal control and not directly influenced by individual interests, are vehicles to systems of exchange that enable the buy-in of constituencies that will benefit from not collaborating and would not be burdened by the failure of collaboration. His contention is that the command and control administration of the ESA could not achieve this. In the end it is the ability to manage the crisis imposed by the ESA that results in functional collaboration. “Cruising” is limited when financial resources and time are limited and when sufficient hardship is inevitable if collaboration fails. Thus limiting factors in addition to sufficient time for coalition building while all parties are under the threat of sanction enables crisis management and eventually, investment (Freeman 2010).

4.3 Collaboration and Regulation: The Problems of Law, Regulatory Culture and History

The above description focuses on the dynamics of stakeholders in collaboration to meet satisfactory resolutions to conflict through collective action to alter governance institutions. It does not touch upon the complex backdrop of regulatory structure, culture and history that influences collaborative river governance institutions. The state of the modern move toward the use of collaboration in ecosystem governance is precariously balanced. Serious questions exist as to the complexity and legality of collaboration. It is unclear whether the tradition and culture of rule based law can or should make way for collaboration and uncertain how much the culture produced by the history of water law serves to hinder it.

Issues of scale and regulatory or scientific capacity in ecosystems and their governance agencies seem to require that governance bodies be designed in ways that test the limits of regulation (Karkainen 2002). Ecosystem and similarly, watershed boundaries seldom abide political boundaries and are thus subject to multi-scalar, multi-jurisdictional management (Karkainen 2002, Gillon 2002). Knowledge and ability to gather information about various system functions, ability to access funding sources and operational abilities will vary greatly from the scale of landowner, to local government, to state and federal levels. Hybrid institutions, “which involve horizontal coordination among multiple and (at least nominally equal) ‘sister’ governments” and vertical coordination across multiple tiers of government from local to federal can integrate capabilities regarding information resolution, funding sources, knowledge and skills to successfully manage complex multi-jurisdictional systems (Karkainen 2002 pp.13). “The collaborative ecosystem governance model explicitly recognizes the need for integrated, holistic management of ecosystems as systems, and grapples with questions of scale and complexity in ecosystem management, emphasizing locally or regionally tailored solutions within broader structures of coordination and public accountability” (Karkainen 2002 pp. 3).

But prudence, fairness and sheer complexity simultaneously caution heavily against abandoning strict rule of law regulation for the ambiguity of the collaborative forum (Sousa & McGrory Klyza 2007). As outlined in Chapter 3, challenges to watershed management include clean water and air, endangered species, irrigated agriculture and land use management at the federal and state level. Each western state has similar yet diverse allocation laws for surface water, ground water, and management of

wildlife. Each phenomenon is administered by different agencies at federal, state and tribal levels (Gillon 2002). Sharing of power in collaboration is complex and not easy to accomplish (Karkainen 2002).

This complex regulatory patchwork historically attempted to apply highly prescriptive remedies in a command and control fashion to the problems of complex and largely unique ecosystem circumstances at all scales as if scale were irrelevant (Karkainen 2008). The resulting practical failures have led some to believe that alteration to this regulatory system is inevitable. Karkainen (2008) invokes what Sable and Simon referred to in public law as the use of “destabilization rights.” Destabilization in the public law context refers to the courts’ use of constitutional or statutory violation to “pull the plug on” or destabilize an offending institution while remanding its solution to the state to resolve, often in collaboration with the original plaintiffs, while retaining jurisdiction for future adjustments. In this way, courts have taken lessons from the civil rights era in which forced structural prescriptions developed by judges fell short of suitable remedies for a given problem. While a solution is then mandated, the designers of the solution are those with expertise to solve the problem. Transferred to environmental management, the implication is that the current command and control regulatory institution is ossified and ineffective. Karkainen broadens the use of the model to include “destabilization events” in ecosystem governance such as citizen suits brought under the ESA or “anthropo-natural” crises such as climate change induced droughts that might force more creative solutions than those available under the “rule of law” model.

Collaborative attempts at resolving the mismatch between the substantive problem and the prescriptive solution face the dilemma of how to produce accountability without a rigid and formulaic set of rules. Some view them to be the “ultimate policy without law—the making of an entirely new approach to regulation and natural resources policy without statutory guidance” (Sousa & McGrory Klyzer 2007 pp.3). The dilemma exists in that despite the apparent devaluation of the law, the solutions law has provided and scope of the regulatory structure are insufficient. For instance, in the proceedings of regulatory negotiations (reg-negs), where the regulatory structure is negotiated between the regulator and regulated stakeholders, the negotiating committee is authorized only a specific scope of authority from which to attend the deliberation. However, “only in the process of deliberation is the appropriate scope of a problem likely to emerge...the moment when scope issues arise in negotiations is likely also to be the moment the key difficulty with the statute, existing regulation or initial conception of the problem becomes clear” (Freeman 1997 pp. 25). Without re-conceiving the committee’s negotiating authority, or in the broader sense of environmental law, a statute’s authority, a proper solution may not be found. Often, this reduces the scope of available reforms, especially in that most bargaining taking place in these scenarios is viewed in terms of potential issues to be traded or compromised. This creation of a zero-sum approach reduces the options for problem solving and makes full disclosure dangerous to parties involved (Ibid.).

However frustrating this can be to the process of solving problems best suited to collaborative solutions, the constraints that exist do so for good reason. Environmental laws of the late 1960’s and early 1970’s were constructed in a rigid, prescriptive manner

in response to “interest group liberalism” that evolved out of the New Deal Era. Interest representation functionally contributed to prevalence of industry capture of regulatory policy “erasing the distinction between public authority and private interests allowing private interests to use public power to achieve their own purposes” (Lowi from Sousa & McGrory Klyzer 2007 pp.3).

Because of its similarity to interest group liberalism, environmental organizations strongly oppose collaborative processes in many scenarios where there is likelihood that they may weaken existing regulation in favor of industrial interests who are often perceived as approaching the collaborative process with a sense of entitlement (Freeman 1997). Environmental organizations repeatedly feel that the interests at the table are strongly weighted in favor of parochial economic interests in processes that involve agencies “horse trading” with regulated partners while skirting formal evaluation processes (Echeverria 2001).

The decades of “rule based litigation” that came out of 1970’s environmental law produced a rule-based and rule-bound regulatory model (Karkainen 2002(2)). “It seeks to solve environmental problems (and just as importantly, to retain a critical disciplining role for public interest lawyers) by imposing and enforcing, in a top down fashion, tough binding rules aimed principally at the largest and most visible categories of corporate targets and secondarily, federal agencies” (Karkainen 2002(2)pp.2). The culture of entrepreneurial litigators who helped shape this model are integral in retaining it. Despite the potential that it hinders more comprehensive solutions to real world problems, the ENGOs whose ranks are comprised of many of these same litigators are chronically deficient in resources and facing industrial interests with greater incentive to collaborate

and comparatively limitless resources. They remain far more committed to retaining the “rule of law” model (Karkainen 2002(2), Freeman 1987).

Finally, a similarly embedded friction in the legacy of western water law exists between state and federal governments and the heterogeneous water appropriators they serve. The problem is historical and summarized by Getches (2001): when western water resources were public domain, the federal government had no resources to develop or enforce their use. Settlers were encouraged to take and use water they found there for mining, agriculture and domestic uses. National policy favored development and water was an instrument of that policy. If settlers in new states and territories could avoid or resolve water conflicts themselves, the federal government was pleased to defer. The Supreme Court ultimately held it was the states prerogative to allocate water on public lands by any system they chose. Western states relied on decisions recognizing their freedom to choose an allocation system to apply within their boundaries to support an “expectation of exclusive and perpetual state control over water resources” (DuMars and Tarlock 1989 from Getches 2001). The seminal *United States v. Rio Grande Irrigation Company* however, made clear that state-authorized water use must not interfere with federal rights to protect flow of the stream and can be superseded by the exercise of federal powers over commerce and public lands. “Almost every iteration of the policy of deference was accompanied by citations to Rio Grande, which subordinated state control to federal supremacy” (Getches 2001 pp.3). Many federal policies seem to give priority to state supremacy, but all retain federal control.

Internal friction within states characterized the water development era. Although publicly claiming state authority over water resources, development of public works was

attractive for politicians who could deliver tangible results to their constituents. “The primary water policy objective of western politicians in the twentieth century was aimed at capturing federal assistance for water projects” (Getches 2001 pp.5). Competition for these funds and politics of developing projects created incentive to subordinate state water rights and conform state policies to comply with federal goals in order to participate in federal dam building. At the end of the water development era states were left outraged by combination of constraints imposed by 1970’s era environmental laws and the abrupt collapse of federal water project policies in response to public environmental sentiment and economic constraints. They felt their control of the future had been undermined (Ibid.)

The tension between water appropriators and federal government in control of water rights is epitomized by litigation concerning Section 402.03 of the ESA’s implementing regulations which states that only discretionary agency actions on the part of action agencies trigger Section 7 consultation (Drake 2001). The regulation itself has a convoluted and controversial history (Hasselman 2006). Nonetheless, in the 2007 decision *National Home Builders Association verses Defenders of Wildlife*, the Supreme Court held that if an agency’s authorizing statute mandates that the agency “shall” perform certain actions that would normally trigger Section 7, Section 7 does not apply (Hasselman 2007). Seen initially as a victory for water users, it is argued that the decision may have limited the scope of the regulation by specifying its qualification in such narrow terms as mandatory (“shall”) and specifically statutory (Ibid.). Here, arguments may be generated for easier findings of agency discretion and may limit the power of

regulations or contracts in protecting water users from re-allocation of water for endangered species uses (Hasselman 2007, Benson 2011).

While the complexity of ecosystem and watershed management seem to require some sort of comprehensive collaborative approach to governance, this requirement is met with a dilemma regarding the propriety of the “rule of law” regulatory system (Karkainen 2002, Sousa & McGrory Klyza 2007). The historical necessities of the “rule of law” system and supporting culture of public interest litigators buttress a distrust among environmentalists that serves to hinder investment of these parties in the collaborative forum. The historical battle for states to assert control over water resources against federal encroachment has developed a culture of resistance that, when pitted in adversarial zero-sum negotiations, increases the limitations already threatening creative, outside the box solutions (Getches 2001, Karkainen 2002(2)). Environmental advocates as well as resource appropriators have ample legal justification to retreat to what may seem safer adversarial positions, yet the prescriptive legal solutions rarely satisfy disputants real needs (Karkainen 2002(2)).

It is relevant to point out some important factors about both the Federal regulation and state allocation systems. There are some that view the system of western water allocation as “steeped in archaic concepts fashioned to address situations no longer relevant” (Cosens 2003 pp.1). Others see it as fair and sustaining to a culture and economy that has helped the west to thrive (Willardson 2011). Most importantly, water development is likely the single most significant threat to species (Loso et al 1995 from Getches 2001). Because of federal regulations, it is also a threat to human water use itself. Specifically regarding the ESA and western water law, both regulatory frameworks

provide nearly absolute protection for one interest, neither seeks to balance economic and environmental interests, both protect the status quo better than they provide for the future and both are already more restrictive on paper than in practice (Benson 2004). While collaboration is riddled with difficulty, it is currently tested as a third option, stretching the limits of regulation and comfort, and currently serves as the best concept for resolving the impasse between environmental and allocation regulatory systems. (Adler 2008, Karkainen 2002(2), Sousa & McGrory Klyza 2007)

5. Research Design and Methodology

To understand what factors become mobilizing incentives for investment in collaborative ESA implementation on the MRG, it was necessary to understand the *interests, relationships* and *pressures* of the various partners. Interests illuminated the level to which a partner finds itself threatened by the ESA or possible compromise with the federal government or other partners (Doremus 2006 from Scott et al. 2006). Relationships attest to a level of trust present within the program or how trust and coalition building have been fostered (Bates 1988, Freeman 2010). The term “relationship” can also describe structural elements such as political or some other advantage, need for coverage and resources available. In combination with interests and relationships, pressures perceived by the various partners can show potential for “crisis” management, time limits on “cruising” and necessity of investment (Freeman 2010, Ostrom 1990).

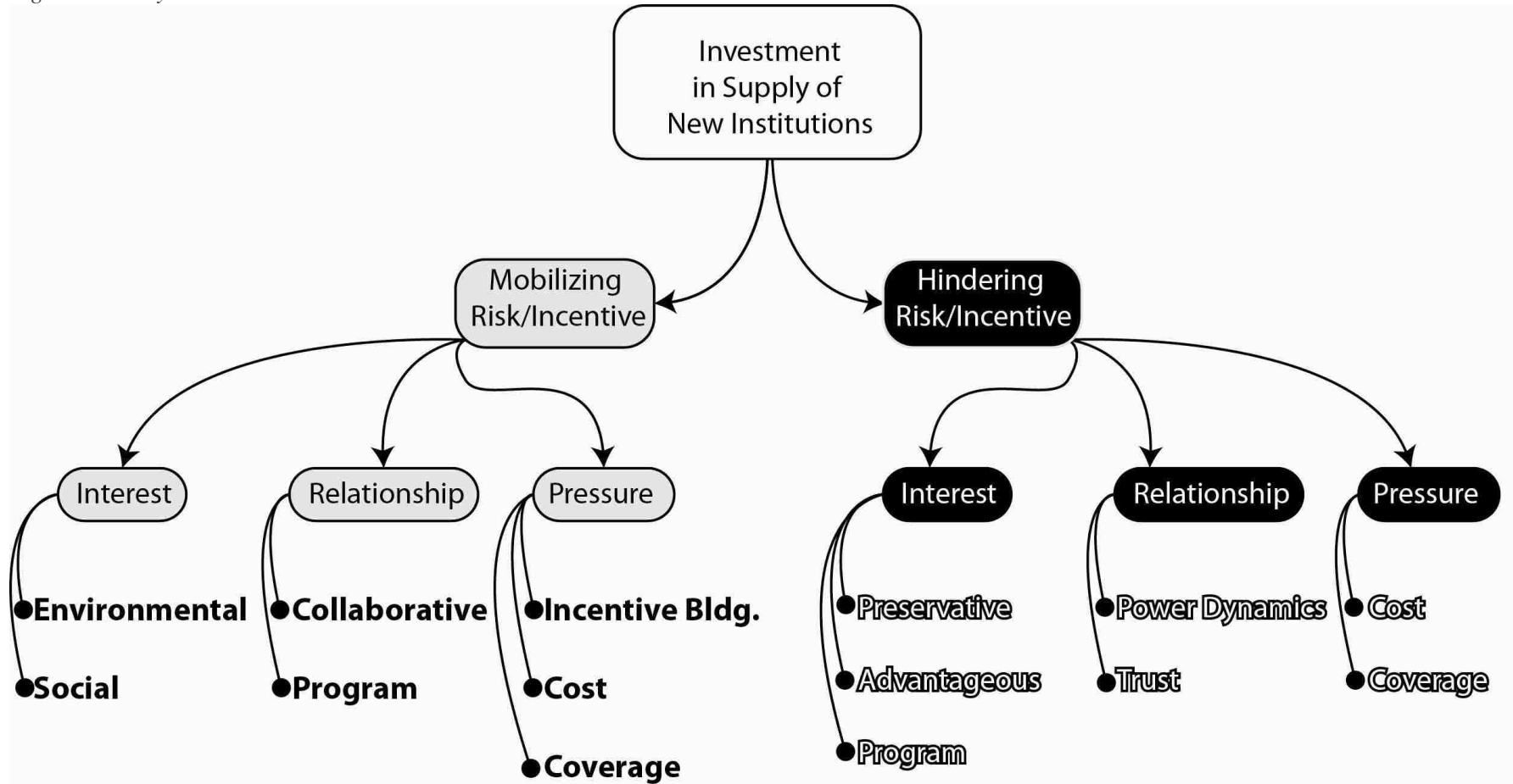
Data regarding interests was primarily gathered through a series of semi-structured interviews. This was aided by observation of Program meetings and document analysis. Understanding of partner relationships was dominantly gathered within the interview process as well, but was also effectively supplemented by observation of group dynamics in meetings. Pressures were illuminated by all three types of data collection: interview, observation and document analysis methods. Document analysis was used to more directly understand incentives such as financial, infrastructural and ESA compliance related incentives of participation. Documents were originally reviewed as a framework for general understanding of the Program and to develop interview questions. Documents were also reviewed to flag relevant sections for coding and analysis. This was then honed

after the interview process in which participants identified the importance of various documents.

In all, thirteen interviews were conducted with representatives of stakeholder organizations of the MRGESCP. Because of their positions' importance in literature, some parties not officially members of the collaborative program were also interviewed. Interviews were limited to members of the sixteen stakeholder organizations or peripheral organizations that were either directly influential in the decision making process or potentially influenced the process through other-than-collaborative methods. Some important, higher ranking representative voices are not included in this work through failure of one kind or another to schedule their interviews. Often this was attributed to busy schedules, but may also have resulted from an interest in not being interviewed.

The analytical framework for evaluating incentives for investment mobilization divided incentives into two categories: those that can be described as investment mobilizing and those that can be described as investment hindering. Incentives that mobilize investment were seen as those that contributed to proactive collaborative development of effective institutions for accomplishing ESA goals and the protection of social and economic viability simultaneously. Investment hindering incentives are incentives to prolong delay of action, participate with minimal investment in (free-ride), or attempt to scuttle collaboration or specific program elements that threaten a particular party's interests. The rationale for specific words is found in Freeman (2010) as the word "mobilize" is consistently used to describe the process of investment and "hinder" is a near-antonym.

Figure 3: Analytic Framework



To develop the analytical framework further, these two categories of incentives were divided into incentives based in interest, cooperative relationship building and pressure. The analytical framework informed the questions asked during semi-structured interviews. These questions were asked in person and responses recorded or hand written. These questions are listed in Appendix A and followed by an outline of the analytic framework, each component of which is linked in the appendix to the appropriate question.

The analytical framework was used to develop the final codebook used for analysis in the qualitative research software. Upon interaction with empirical data, it was necessary to condense analytical categories in the final codebook based on their presence, absence, or duplication. The final analytic codes in the codebook used were also condensed based on the need to use them only in identification of a relationship. For example, incentives related to relationships would simply be coded: **REL**ationship. This is because in coding text, it is important to avoid specificity (good verses bad relationship) but simply use the relationship to refer to the specific piece of text. This is because the narrative description to be generated is in the text itself and is qualitative in nature. Further details of how the analytical framework and code book were used are described in the data analysis process that follows.

Analysis of data was conducted using multiple methods. Qualitative research software Atlas TI v.6. was used to understand relationships between codes derived from the analytic categories laid out above and logistical and subject-position categories that are detailed in the final code book in Appendix A.

The Atlas analysis process involves the development of three categories of codes: *Subject-position, Logistical and Analytical*. Subject Position codes designate the actor or person speaking such as an interview respondent according to their affiliation or position from which they are answering. An example subject position for this research would be “Non-Federal Actor”. Others are “Federal Action Agency” and “Strong Need for (ESA) Coverage.” Subject position codes combined to describe a specific stakeholder based on identity and structural factors.

Logistical Codes identify the source of the text or dialogue being analyzed based on its origin in the data collection process. This could mean that it tells the analyst whether the information was taken from field notes or a reflection journal, observation or interview data or whether the conversation took place in an official or informal setting such as in a meeting or over dinner.

Finally, Analytical Codes are based on the researcher’s criteria for analysis. For purposes of this research, these were the categories outlined above (*mobilizing versus hindering: interest, relationship and pressure categories for each*). These analytical themes were amended as necessary since part of the preliminary process of applying these codes is that understanding the empirical situation being researched is altered by their application. This is simply a function of education that a researcher undergoes while attempting to understand the phenomenon of concern. The coding process can be iterative and may involve the re-organization or complete re-creation of the coding system, as more is understood (Isaac pers com 2012).

Codes were then applied to the data (such as program documents, interview transcriptions or observation notes) so that text was comprehensively coded under the

researchers system. From these coded texts, relationships were developed for codes and their intersection with others. Theories were developed to describe the relationships illustrated by these intersections and the researcher's new understanding was applied to further development of the coding framework and theories regarding the phenomenon in question. This was achieved using an analysis matrix in which subject positions were compared to analytic themes and narratives developed based on the intersection of these themes and positions.

Simultaneous to the Atlas process, an analysis notebook was created in which a section was devoted to each agency or entity interviewed, the Program as a whole, and the various themes being evaluated: exchanges/options developed, goals of the Program, burden of compliance, trust relationships, cost, adaptive management and scientific controversy and the transition to the RIP. During the coding process, specific narratives encountered in each interview, observation or document analysis was noted in the pertinent section. In the case of sections regarding specific stakeholders, one half was devoted to statements made by the stakeholder regarding themselves and the other half to statements made about the stakeholder by other individuals. In this way, an organized narrative, based on empirical data was developed for each stakeholder or theme. Each was summarized and developed into the final results and discussion section.

Since rigor in qualitative research is of the utmost importance, two journals were kept to affectively demonstrate current efforts and ideas as the project progressed (Isaac pers com 2012). This ensured a "paper trail" that chronicles the history of the project as it evolved. One journal was for collecting field data. The other journal was for informal reflection, ideas and recording advisory meetings with committee members. Journals,

voice data and transcriptions were available to advisory faculty for verification, and upon completion of the research were destroyed per confidentiality protocols.

6. Results

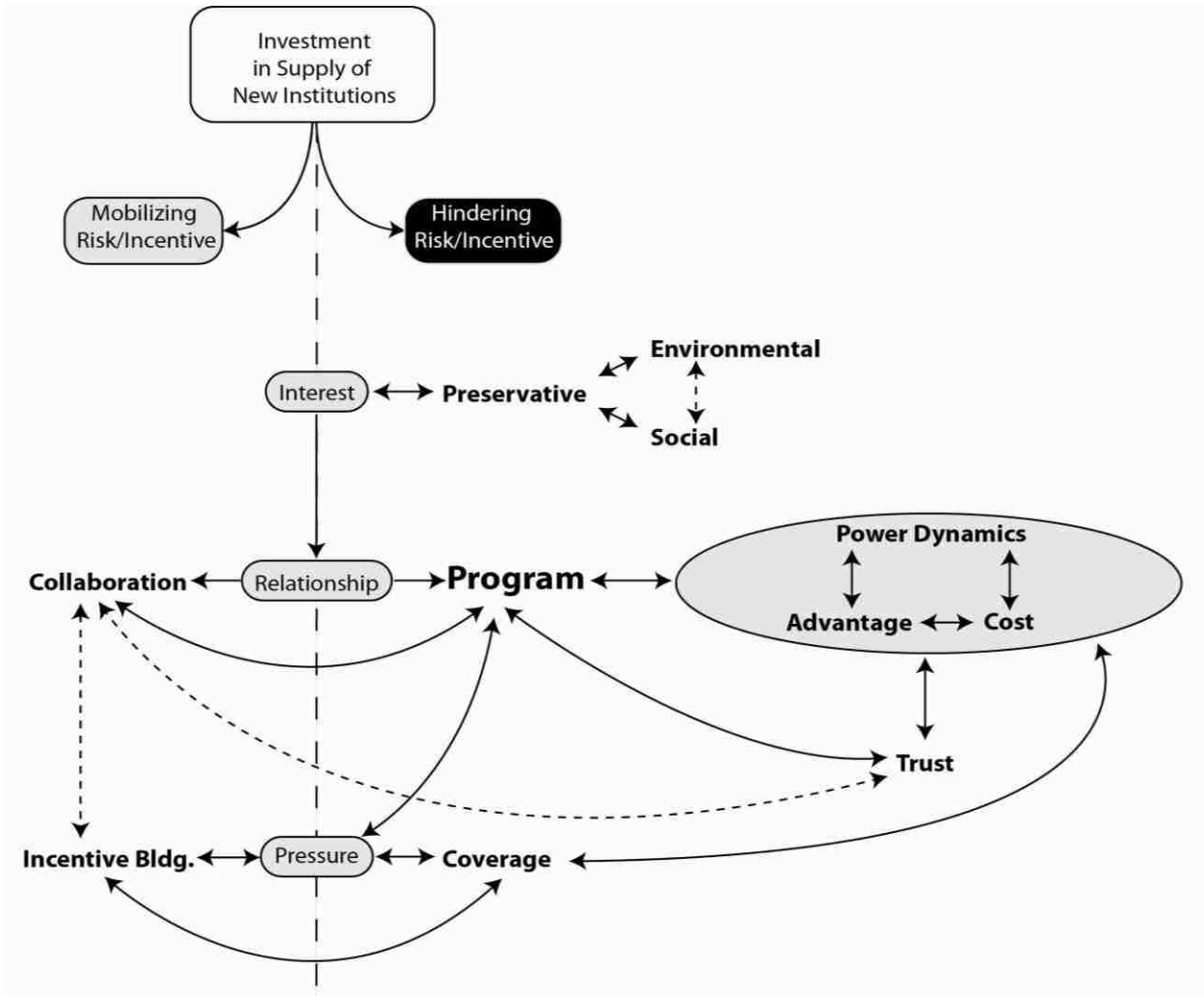


Figure 4: Analytic Themes in Approximate Empirical Interaction Post-analysis understanding of the Analytic Themes suggests that many (at least presently) fall on the side of Investment Hindering Incentive. Mobilizing components affect all interactions but do not dominate participants' sentiments toward the Program as a whole reflected in the dominance of Hindering Incentives (negatively stated) in the Program category.

Risk and incentive play a convoluted role in the dynamics of the MRGESCP. For simplicity's sake risk and incentive are collectively referred to as "incentives" which are either mobilizing or hindering. It is important to note that it is an exogenous force, the ESA that originally compels all parties to the table and how this shaped and shapes interaction. The dynamic created by this fact is one of defensive positioning in which all parties can basically be divided into two camps within a legally compelled collaboration. There are those attempting primarily to preserve a social or economic good and those attempting primarily to preserve an environmental good. Social and environmental incentives then, end up reflecting this division and both are collectively preservative. These three categories make up Interest based incentives which go to influence the relationships present in the Program.

On one side of the relationship-based incentives that influence the program are collaboration-based incentives that at various times in the Program's history and, participants hope, in its future have contributed to investment in institutional supply. On the other side are incentives related to the Program's structural realities that participants generally described as problematic and that diminish the value of the collaboration-based incentives. These Program-related incentives are negatively influenced by a three-way reinforcing relationship between structural elements comprised of power, advantage, and cost related incentives. Each of these categories was originally assigned to relationship-based, interest-based and pressure-based respectively in the Analytic Framework. The relationship between these three is seen to negatively affect trust which in turn influences Program related incentives. Simultaneously, the relationship influences financial and legal coverage under the Program and dictates the level of pressure imposed on

participants to effectively attend to the goals of the Program. Coverage and pressure could be affected by incentives to produce mutually gainful options (incentive building) and mobilize investment. These incentive building exercises are reportedly rare. The conglomerate interaction of hindering influences appears to stifle investment in the sense that investment changes the status quo. This reinforces some participants' assertion that the overriding factor influencing the Program is coverage. It complicates the development of pro-active, problem solving institutions and likely reinforces the status-quo as benefits more powerful interests at the table.

Subject position codes developed in Chapter 5 are used to identify quotations throughout Chapter 6. In section 6.5 they are used in combination to more specifically define stakeholders' subject positions and compare and categorize their statements. Subject positions from Chapter 5 include: FRA Federal Regulatory/Action Agency, NFA Non-Federal Actor, SNC Strong Need for Coverage, WNC Weak Need for Coverage, EXST – Has some exogenous/internal structural advantage, RESources- Has resources, either water, land, monetary, DUPLICative- Disadvantageous or secondary (less influential) dual representative. Only FRA and NFA are used to identify quotations.

6.1 Interest Based Incentives

Interest based incentives characterized stakeholders based on their primary missions as entities and how those factors drew each to the collaborative process. In actuality, these incentives are preservative incentives that initially divide participants into two camps based on environmental or social interest.

6.1.1 Environmental Concern Based Incentives

ENV

Entities with a primary concern of protection of species tended to find the Collaborative Program to lack proper incentives for their participation or to be muddled in ineffective activity:

- “If you asked anyone, what are the institutions that (A) exist to benefit the river or (B) that implement policies that provide secure water for the river, the answer would be they don’t exist.” NFA
- “The Collaborative Program is a vehicle of the status quo” NFA
- “We don’t have the resources. They (agents of the status-quo) have all the resources in the world.” NFA
- “They can meet forever and ever and ever and this gets back to one of the problems of collaboration in this context, in this sort of setting is, our enemy is time. Their ally is time.” NFA
- “They would basically like to use the RIP to protect their water uses, current water uses and contribute a little bit to recovery but they lack this commitment, that our goal is to recover endangered species, that’s not their goal and its quite obvious its not” FRA
- “My personal disenchantment, when I realized that this was never going to be truly collaborative, that this was going to be, you know some kind of old school bureaucratic hybrid was when Domenici’s aid said well the senator can’t just keep, well this is just not sustainable to have this funding come through as a congressional add every year, we want to get a charter for the program and we can’t just have these discussion groups, we’ve got to have only the top dogs that can make the decisions making the decisions” NFA

The structure of the program is seen to be heavily weighted in favor of interests with power and resources. These interests, as illustrated in Chapter 4.3 tended not to favor environmental causes, but economic. Entities with other primary stated motivations, stated environmental incentives as secondary and in defense of their operations:

- “Generally bringing the SJCP water down to where its taken out is overall very favorable for the species” NFA
- “Half of the water withdrawn at the diversion is returned back at the reclamation plant, that is really the only effect” NFA

- “So I think in collaboration we can all help each other and we can provide the protection to the silvery minnow and we can protect our interest also.” NFA
- “(MRGCD water) does get to the fish...so one of the ironies that I think that MRGCD sees is that a lot of that return flow water, its going to go back to the river but its sort of a willy nilly.” NFA

One participant described a dynamic based on the scope of the ESA that limits its ability to attend to the problems that altered the river in the first place such as the building of large scale flood control and impoundment features that permanently altered river geomorphology. Since the building of these structures is seen by the ESA as action which no longer involves federal agencies, it cannot force alteration of the activities (i.e. structure removal/alteration). The functional scope of the ESA is then limited to water management. Since much of water management can be claimed to be beneficial to species, partner representatives can claim that they have only limited responsibility while continuing to manage water under their regular operations. The above comments also allude to a lack of understanding of how species needs may interplay with water infrastructure and return flow dynamics.

6.1.2 Social System Related Incentives

SOC

Those entities primarily concerned with provision of water for human uses cited numerous social incentives including economics, obligatory duties to water users, heritage and tradition:

- “Yes, yes it could affect farmers businesses you know depending on how it is being implemented in the future, like so far we have been able to survive and we are still doing our business, but people have to change their way of providing their businesses providing the resources they need” NFA
- “I think that a we have responsibilities that we need to continue to do so a, for example our obligations (to constituents)” NFA

- “The water rights in the MRG are some of the oldest in the state of New Mexico. They are older than almost anything in Northern New Mexico with the exception of some of the ones around Espanola and up around the Chama.” NFA
- “There are friends of mine that have water rights that date to 1796 and earlier. So there is documented evidence of diversion irrigation in the middle valley in my area, dating back 5000 years.” NFA
- The pueblos and pre-puebloan peoples were indeed diverting river water for agriculture long before anyone else was here. And you know when the conquistadors came through and they stood on the hill by ABQ, they estimate 25,000 acres under irrigation when they arrived.” NFA
- “...uncompensated takings and having the people that own the water rights get their water moved around without any idea what the heck was going on? Getting blessed with Klamath?” NFA

There are multiple facets to the interactions between stakeholders with primarily social or economic goals. Some of these entities are more or less influential than others. Some are municipal agencies while others are organizations that represent a specific cultural group such as irrigators or tribes. While each agency has a constituency, it can be said that some groups, especially those that have a more representational than resource management related goal, feel more connected to tradition than others. In some cases, a conflict dynamic is established when a more representational and a more resource management oriented entity both represent the same constituency or resource. Conflicts or alliances can arise.

There is also an ongoing cultural shift in the MRG between the agricultural and urban way of life (Shively 2001). Individuals on either side of this divide can also find conflict and also have different levels of value they place on heritage and tradition.

6.1.3 Other Preservative Incentives

PRE

Other preservative incentives included protection of autonomy, interests, legal exposure, and financial resources:

- “And a, if we don’t work collaboratively there’s a chance that somebody else may get into your field and may impact on you indirectly.”NFA
- “I think everyone has an interest in protecting their interest, and everyone also has interest in complying with the law. So those are two of the couple of things that keeps people together, if you can work collaboratively and each protect our own interests I think you have succeeded in some way.”NFA
- “But I think there’s a lot of resistance to moving forward and having some belief that some of the things were doing could do some good, there seems to be so much reluctance to actually do anything until we know its going to do good, so its more internal to the collaborative program that’s been the problem I think.”NFA

These kinds of preservative interests are less based on the specific social or environmental goals and have more to do with protection of finances, legal exposure or the ability of a given entity to maintain authority over its particularly area of responsibility without having to be dictated to by outside entities.

6.2 Relationship Based Incentives

6.2.1 Collaborative and Program Based Incentives

COL

Collaboration, as a theoretical tool, was looked upon favorably by many participants. Where it was seen by some as “contextually ineffective,” the theory at least, was seen to have merits, if stated skeptically:

- “Collaboration is the elixir of the status-quo...theories and collaboration all *sound* fine.” NFA

Most participants found there to be some distance between collaboration in theory and in practice. By those who found it to be the best (or only non-litigious) option, collaboration was viewed as a tool for possible social learning, as a means of getting parties involved in decision-making and negotiation, and one that could improve efficiency of ESA implementation by streamlining agencies interactions and including non-federal actors in Section 7 consultation:

- “One thing I noticed with the collaboration are with the number of agencies getting involved we are getting expertise from different areas and when you get expertise you get new ideas, and that may be some silver lining for everybody.” NFA
- Well that’s why we’re going to engage in collaboration, that’s why we’re going to argue about it, it may be good for you it may not be good for us, so you know we have to find some other solution to that, I think we are looking at consensus based solutions to the problems, and if we feel that this is really going to adversely affect us we’re going to stand up and say hey this is not the way it should work. NFA
- “...it’s the best we’ve got...the collaboration isn’t going well it has a lot of structural problems...there is a long way we have to go...but we’re not going to make progress any other way FRA
- “Our involvement more directly fit with working within the collaborative program because we have broad powers to obtain funds from the legislature.” NFA
- “Reclamation and ISC put money into maintaining the pilot channel down into Elephant Butte, to make sure that there’s water that can be delivered to Elephant Butte. So all of those things sort of made it so that, there is a nexus with the, both the federal agencies”
- “There is a mechanism by which non-fed entities can get federal coverage. You know the whole Section Ten piece, but the thought was that the non-fed folks would, through the nexus of the Collaborative Program would maybe achieve better synergy with the federal agencies umm, and go through the section seven process, which is kind of the federal process.”

A number of factors go into making collaboration helpful. These factors, such as working relationships increase the ability of the program to transcend trust and other barriers to effective partnerships:

- “Certainly its easier to have hostility towards someone you don’t know personally, so collaboration always helps in that sense.” FRA
- “I spend more time with those people in the agencies and have known Jane Doe and the others over there for years. So we have a good working relationship. My management... have some different interpretations.” NFA

PRO

Where collaboration was seen as a positive theoretical framework, individuals were still prone to see it as insufficiently effective. This is largely because of the structural components of the Program that act as counterweight to productive collaboration. As mentioned above, Program related incentives were strongly affected by

trust and pressure dynamics, both strongly influenced by a feedback of hindering incentives comprised of power-, advantage- and cost-based incentives.

As structural components of the Program that act as negative incentive these factors manifest as:

- Foundational problems with how parties were initially compelled to the table in a “command and control fashion” that resulted in adversarial behavior
- Lack of unifying Program objectives,
- Disparity of individual partner stake in the Program
- Funding Problems
- Natural, Regulatory and Programmatic Uncertainty

Foundational Problems with the Program:

- “...got to the point through the lawsuits where the BOR, FWS and Corps, the three fed entities and the district and the ISC, the two principle non-fed entities came to the conclusion that somehow we could enter this collaborative program. Senator Domenici was very instrumental, basically I think he ordered us all into it.” NFA
- “Well the main drivers of course are the federal agencies, you know it’s a federal law that we are trying to comply with.” NFA
- “...enter the collaborative program, because clearly that wasn’t the way to manage a species. So in order to avoid some of these heinous things, there was legislation drafted.” NFA

Two important factors that arise out of these statements are (1) that the problem itself (endangered species) was not something that participants would have necessarily known of or faced if not for the federal statute. This is significant because, as Ostrom (2009) points out, much of what can be achieved in collaboration is due to the fact that all parties are faced with tangible consequences if some alleviating action is not taken. In cases she describes, the consequences are physical and based on a commonly used resource such as groundwater which, if not for some rethinking of the extraction regime will run out. In the case that sanction under the ESA is the consequence, it may be that a controversial law, opposed in many places at the state and local levels is either ineffective at producing

dire circumstances or is more easily diffused through political activity than is feasible to force collective action. It may be that biodiversity loss itself is not as easily internalized as loss of a commodity such as groundwater. (2) Both by the ESA and congressional intervention, important structural elements of the Program are in essence pre-fabricated installations. The ESA, as described above, *installed* the problem/crisis at the regional level. This means that the problem itself could be seen to be invented in the eyes of those who do not have a direct interest in biodiversity.

Senator Domenici's protective interventions then dictated certain important structural rules for the game and initiated "collaboration" which, at that point in history was an established means of dealing with similar scenarios. What is important about pre-fabricated installations here is that they are based on theories derived from the study of processes that developed organically in other situations. In Ostrom's groundwater example, several adjacent groundwater basins were able to develop institutions that effectively recreated their extraction regimes in sustainable and cooperative ways. Their success prompted officials to export their functioning institutional framework to another basin nearly a hundred miles away which was suffering from similar problems to the ones faced by the original basins. In the second case, the cooperative framework failed resoundingly. The major factor of relevance to its failure one place and success in another is the lack of organic, collaborative development of institutions in the failed basin. The failed basin was being managed with an imported system that might have been structurally sound, but was not a product of the social and political situations at hand in that basin. There was simply a lack of investment. Similar problems may be present in the MRG.

Lack of Unifying Objective

Two consistent themes in the interview process seemed to fall hand in hand. First was the absence of a unifying goal, and second, the means by which to unify parties around multiple necessary goals. Often this was stated in terms of a want for leadership, be it a third party or FWS in the form of solid guidelines for compliance.

- “Incentives, strong leadership, clear vision, if I don’t have those elements, and by clear vision I mean someone who is ready to implement it, institutional mechanisms to allow for the implementation, political will ... you look at the table...you look at the players at the table, are they people who you think of as creative collaborative types when push comes to shove...”
- “The intent of Program participants is two-fold: first, to prevent extinction, preserve reproductive integrity, improve habitat, support scientific analysis, and promote recovery of the listed species within the Program area in a manner that benefits the ecological integrity, where feasible, of the Middle Rio Grande riverine and riparian ecosystem; and, second, to exercise creative and flexible options so that existing water uses continue and future water development proceeds in compliance with applicable federal and state laws. To achieve these ends, the Program may not impair state water rights or federal reserved water rights of individuals and entities; federal or other water rights of Indian nations and Indian individuals, or Indian trust assets; San Juan-Chama Project contractual rights; and the State of New Mexico’s ability to comply with Rio Grande Compact delivery obligations.” Bi-Laws (MRGESCP 2009)
- “The goals are clear enough, but they are conflicting goals. They are goals that by their very nature are going to conflict, which and, that introduces the problem in a collaborative program because you’ve got three different goals that are in conflict with each other and you’ve got all these different entities that, each and every one of those entities probably has one of those goals in mind.” NFA
- “There is not this commitment by entering the program to address this one stated goal. You’ve got the water users come in, they’re goal is to protect existing and future uses, and you’ve got the Service and a few other entities in there, “our goal is to recover the species” okay we are both speaking a different language and there’s a little overlap, I mean, there’s two circles and they’re kind of you know kind of coming a little bit together but they’re not fully overlapped by any means.” NFA
- “The collaborative program could be a wonderful success if everyone was working toward the same goal and trusted each other.” NFA
- “(Okay so that’s kind of like having a very specific goal) yes very much so, otherwise you spend each year trying to comply with the BO and that’s a good thing to do but for 17 or 18 signatories its very hard to do.” NFA
- “ If there is not a clear vision of what is trying to be accomplished and strong leadership to get there that’s different from the status quo, then the forces who are

most resistant to change and most in favor of maintaining the status quo will prevail.” NFA

- “Nobody agrees on what’s to be done?” NFA
- “So far, so much of what has happened in the Collaborative Program is fighting over science. How much water does the fish need and how do you count fish. Those are the two questions they seem to fight about the most and when you are fighting over those questions instead of pooling your resources and saying hey lets figure this out, let pool our resources, lets get water over here, lets do this change in the channel in the river and lets just start doing stuff, instead.” FRA

Disparity of individual partner stake in the Program

Disparity in Partner stake can be seen to manifest from two perspectives. First, there are parties with a great deal of influence, who control resources and who have a great deal of legal stake for the consequences of their actions. Arising from them are concerns over what kind of entities (based on influence) should be allowed at the table. While these entities represent a constituency, they are seen by some other entities as improperly representing it. They are seen to be neglectful of interests with less influence regardless of valid concerns they may bring.

These other parties tend to be less influential in the collaborative forum but may have less ability to discount results that are unfavorable to them. This is true in the case of irrigators whose livelihood depends on their water rights or ENGO’s whose main mission may be compromised by collaborating in an unsympathetic forum.

There is also the phenomenon of shared responsibility in which coverage under the ESA is provided by the Program, but coverage and cost are equalized where culpability in detrimental activities may be highly differential from party to party.

- “What has UNM got to lose? Or to Gain by participation in this program?...” NFA
- “We talk about the big six or the big five. That’s kind of language that’s batted around a lot in the meetings that we have, the Corps and the bureau and the FWS and the District and the ISC and the Attorney General’s office. Kind of referred to now as the big six. It was the big five and then NMAG started paying more

attention to things....But see we are the ones that have resources and we have missions.” NFA

- “There are too many groups in the program that don’t offer anything. I’ll just be blunt. But they can come to the Executive Committee and tie the works up. You know and that’s, I don’t think that’s right. I think you want to have stakeholders, but you want to have stakeholders that are able to help solve the problem and not just obfuscating the problem.” NFA
- “We feel that one individual farmer or one individual pueblo that can tie that up is probably not the best way to be collaborative.” NFA
- “The federal agencies, I mean they basically are the ones who have the primary responsibility for compliance with ESA.” NFA
- “The City’s exposure for coverage, the need to be in the program for coverage is not a really extreme need, it’s a passing need but it really wouldn’t want to drop out of the program because so much happens in the Rio Grande basin in the Metro area that it has got to have direct involvement in some of this activity.” NFA
- “The disproportionate part has to do with resources and control.” NFA
- “My suspicion is that the program itself won’t be able to continue because of the mismatch between what coverage you need and why you’d be in the program at all if you didn’t need coverage.” NFA
- “We are all going to court and the big boys are going to try to strike deals.”NFA
- “Reclamation is going to end up holding the bag.” FRA

Funding Problems

The two major problems of funding for the program are (1) the retirement of Senator Domenici, who as Chair of Appropriations was able to direct a great deal of federal money to the program and (2) the steep decline in federal funding due to national economic factors. A third problem, that of federal inefficiency will be dealt with in the section 6.3.3.

- “...is trying to move from this collaborative effort to what is called a RIP which has been done around the county for other fish, but we have to get that institutionalized by congress so the funding level gets a little more regular.” NFA
- “The Collaborative Program did well for many years because of Senator Domenici’s direct intervention in federal funding procedures and apparatus. But now that’s gone. So funding has gone down terrifically in the last couple of years since he’s been gone.” NFA
- “...and money because they’ve (other programs) got those power generation projects and such and they bleed off that. So they’ve got water and money. The Platte has water. I mean, we don’t have either one and when the budget got

reshuffled the Middle Rio Grande took a disproportionate hit in the budget reshuffle than the other areas” NFA

- “Well part of the problem is that the people who are making decision about where collaborative, where funding goes, which projects get funded, they are conflicted because they want to get their own projects funded, so there’s a problem there’s a conflict problem with making those kinds of budget decisions.” FRA

Natural, Regulatory and Programmatic Uncertainty

Natural Uncertainty

Climate change is expected to dramatically affect the MRG and current drought conditions have many participants wondering how an already strained hydrologic system can produce what the Program needs in annual “wet” water.

- “...its already the second week in February and the big storms are not lining up. Its just not going to be there. So the program is starting to look at what we can do for the minnow in that set of circumstances, do we have the water, can we get the water to have a spike and have some recruitment and slow that down so we can try and get some fish back out there, thing like that, those are ongoing within the program now.” FRA

Regulatory Uncertainty

Participants continually cite the need for clearer obligations to be identified by FWS in terms of what it takes to comply with the ESA. As the process of consultation re-initiates, compliance standards, annual metrics for compliance are frequently discussed.

- “...it will probably end up going to litigation. I wouldn’t bet on it succeeding. The only way it would succeed is if there was major clarity and 100% commitment in terms of what was being laid down by the regulatory agencies and then buy in from agencies with all the resources and from what I can tell they are too far apart to close that gap now.” FRA
- “...because I think that the one thing that would be the savior is for FWS, because they are the regulator, for FWS to be completely transparent and come clean on what it takes to comply.” NFA
- “...right the draft opinion, they want to see a draft opinion before they make their final commitments.” FRA
- “People don’t want to sign on to the RIP until they know what the service really wants and that’s, to me that’s fair, you know I mean, well I signed up to contribute to this, well to contribute to what? Well nobody does that you know, so

this, the service is helping to draft the RIP document. The RIP documents, to be realistic and here is really what we think you can do. But until people know what the speeding ticket is, you know you can't decide whether to pay it or not." NFA

- "Fish and wildlife sort of should be playing the role of the scientists, you know the investigators, the ones who are very curious about is this working? is this not working? They don't seem to be that way and they do some research stuff. They have done some stuff on the ground but there is very little communication with the collaborative program. And there seems to be a real reluctance to kind of go beyond what has already been established as what the minnow's needs are and in some ways a little bit of a refusal that there is a hydrologic reality that we have to work with and that there may be some things we can do different that still allow the species and the ecosystem to recover a little bit." NFA

Programmatic Uncertainty

Due to the complexity of the Program's current transitional state and the level of fatigue that apparently accompanies it, some members believe it may be too much for the organization to handle. There are also issues of program structure and its effects on accountability that threaten to diminish any reforms that may be accomplished by the establishment of the RIP.

- "My personal perception of it is that the program is verging on kind of imploding sort of falling in on itself due to the sheer weight of things that it has to do, how much its trying to do at one time and the amount of party lines that all the agencies are now sort of setting up party lines." NFA
- "I think its both quantitative and qualitative, quantitative in the sense that there is too much at once and qualitative in the sense that the things that are happening all at the same time are inherently so difficult on their own that when you compound them then you've really got it rolled up, so its like I don't know what, like going through a divorce and putting your kids through college. They're independent but they are so big that how do you solve one without the other or independently?" NFA
- "So every signatory now is going to have to sign its own agreement, apart from signing on as being part of the RIP, then every individual signatory is going to have to sign separate agreements and so there's hidden costs that are going to be shared that were never revealed at the beginning." NFA
- "It may be that this is dealt with in their individual management agreement with the Program(for membership in the RIP). So you see there is a blanket agreement that all the signatories sign on and then there's individual agreements that all of us negotiate on our own that we don't know what the other entities are having to negotiate. So very, see this is why merely proposing one structure (the RIP) to replace another structure (the MRGESCP) is not a guarantee that its any better

because they set up a system that there's a certain amount that's out in the open and then the rest of it the real nitty gritty is all done behind closed doors and we don't know what the other person is negotiating." NFA

- "Its too far to turn back as far as the transition, we let a one year clock run for a year and a half and we are just simply out of time. And the number of things that are still unresolved have piled up and we are not going to get them solved any faster doing things the old way." NFA
- "The protection against litigation ends on March 16 and they have now created a timeline that allows seven months for lawsuits to be filed by the Environmental Community."NFA
- The Doe lawsuit against MRGCD, Texas Lawsuit against NM on the Rio Grande, these are huge, huge things that change everything about water in the river, everything." NFA
- "The collaboration isn't going well it has a lot of structural problems, there is a long way we have to go, but we're not going to make progress any other way. So we have to find a way to make it work, we are all in this together. And the collaborative program also was determined to not be working and this was part of the impetus for the RIP." FRA
- "So many people are still so entrenched in their own agency viewpoints, and its from both sides its from the species side and from the water users side, we both go in there, all of us enter these processes to protect our own interests first and people have not yet adopted this mindset that we are going into this to solve the problem as opposed to protect our own interests and I think until you can get past that, that philosophical barrier than I don't think it matters how much time you put in, its not going to make any difference in the outcome." NFA

6.2.2 Trust Based Incentives

REL

Trust is a dynamic factor in the MRGESCP. Because of the collaborative nature of the process, trust building takes place in the forum of "working relationships."

Individuals felt they had a much better concept of the interests of other parties, understanding of individual personalities and felt a general sense that it was harder to distrust or dislike someone you were actually interacting with though interactions still proceeded in wariness:

- "Certainly its easier to have hostility towards someone you don't know personally, so collaboration always helps in that sense, but I think we are in a trust yet verify situation, none of the parties are going to trust another party implicitly." FRA

- “All parties have learned a lot about what each of what our individual agencies do and what our perspectives are. You know maybe there is an inherent amount of trust just by understanding. But I still see a huge amount of distrust going on between you know the non fed folks and even the fed folks. A lot of it is aimed at the FWS as the regulatory agency in the room, so yah I don’t know. To some degree there has been some trust building, but probably not as much as needs to be.” FRA
- “Even reclamation is going to slicing and dicing, you know drought tends to really accentuate peoples differences too so I think the fact that we are going through this at the same time there is a drought makes the trust a little more tenuous and a, but at the same time I think as long as there is that core program I think you sort of have to trust that eventually you’ll get there and I think that everybody feels that way.” NFA
- “...but at my level yes (there is trust). But the reason is because I spend more time with those people in the agencies.” NFA

At the same time, progress that is made through working together is countered by trust issues stemming from:

- Cost
- Protection of interests
- Inconsistency of agencies and individuals
- Partner Agency to Partner Agency Dynamics and
- Individual personalities

Cost related trust issues

Partners see cost affecting trust in two ways. (1) Trust is tested in times of limited financial resources as cooperation and agreement over how to spend funds is strained. (2) Past spending for various functions is harder to justify when results for the spending are not seen.

- “Okay so I do believe there are trust issues but I think that people are generally trying to work on those. The question becomes as we go to a RIP with less money to do more things, what’s going to happen?” NFA
- “Trust or distrust has always been a significant factor. It has been an undercurrent in our end relationships as far back as I can remember. So it isn’t like trust suddenly emerged as being a big issue. Its always been there, its just what form it takes. Trust or distrust has gotten magnified more recently, primarily because of the dwindling of the other most-scarce resource beside water and that’s money.” NFA

- "...the collaborative program says oh yeah we are going to do restoration in the Albuquerque reach, the City places it here, and for that million dollars, 25% of it had to be in-kind contributions from the non-federal entities. We are on a 25% cost share which is a screaming deal, but 25% of that million dollars is paid by people like me's tax dollars or actually state of New Mexico because ISC has footed a large part of the cash bill" NFA
- "We have spent \$170 million and the minnow is doing worse than it has ever, since we started measuring it, its at its lowest numbers. So that's one thing its just all this effort that we have put into it hasn't secured the future for the minnow." FRA

Protection of interests related trust issues

Partner's tend to believe that most Program participants would do what they could to protect their interests first. They did not trust that their interests would necessarily be accounted for by parties other than themselves.

- "I think, I am sure everybody is going to protect their interests, whether it is done through collaboration or it is done through the legal system or it is done through administrative process." NFA
- "People don't want to sign on to the RIP until they know what the service really wants." NFA
- "You mean through uncompensated takings and having the people that own the water rights get their water moved around without any idea what the heck was going on?" NFA
- "Everybody is playing a game, trying to maintain what they, what rights and abilities they have, you know to serve their constituents and to meet these needs and collaborate and there is a balance on everybody's part." FRA
- "...but the real reason that everyone is there is to cover their own asses and people have a hard time moving off of that into a truly collaborative program." FRA

Inconsistency of agencies and individuals

Inconsistency was reported as a function of both agency personnel turnover and as a problem of unclear trajectory on the part of agencies, especially FWS.

- "You know it depends on the personalities more than anything else...the district is probably kind of unusual in this in that just probably because of Doe, Doe's been there forever. There is no change at the district. It's a very conservative, old fashioned kind of glacial pace. The same people have been around for this through the whole process. But at the Bureau on the other hand, every two or three years there is a new area manager. Some of them we've gotten along really well, some of them I trusted implicitly. Some of them I just didn't trust. The

Corps, what is it every eighteen months they change colonels? And they always send in a good person, umm but there's that period of change when a new face shows up and they don't have twelve years experience with all this and there's all these relationships going back and there is a constant turnover of personalities and personnel and it takes a while to get you know, to kind of feel out those new personalities....you meet these people and you spend more time in meetings with them and you have some discussion with them outside the program meetings and eventually you decide whether you can trust them or not." NFA

- "So I have often tried to ask the right questions at the right time and you often find you don't really get the right answer. But it's a repetitive kind of cycle that after awhile you get a little disillusioned about it. Somebody says well we've really looked at it and we've decided that creating the RIP is the easiest and best thing to do right now. And they lay out what is generally involved and that sounds good actually and let's get that started a year ahead of time, and then a whole year goes by and you are really not as close as you should be after a year and then you find out that there are a whole lot of other details involved. So every signatory now is going to have to sign its own agreement, apart from signing on as being part of the RIP, then every individual signatory is going to have to sign separate agreements and so there's hidden costs that are going to be shared that were never revealed at the beginning, so there's all sorts of stuff that happens like that." NFA
- "So we were kind of led far down that path (the RIP) by the service and then they stepped way away from it like it was a lump of kryptonite or something like that, it's a mysterious process to watch..." NFA
- "But you know things are all up in the air now. The current plan, you know, reclamation was planning to propose the RIP in its new plan and that's what we were going to do consultation over, plus the water ops plus the RIP and now, you know at the last meeting they told everyone that they are going to pull back and not, they are going to pull the RIP out of their proposal" NFA

Partner Agency to Partner Agency Dynamics

Many of the agency to agency trust dynamics were the products of historical interaction. The historical state versus federal conflicts appeared in this context. They also relate to the above category of protection of interests.

- "When Pete Domenici announced his retirement, the reaction in the room was blatant. The next meeting of the collaborative program, the gloves were off, because now Domenici wasn't here to protect anybody any more and FWS went "oh my God they don't have anyone to protect them anymore, now we can really go after, we think, you know they've been hiding water on us all along." NFA
- "I think because a lot of people complain that what the service has been mandating is draconian and not based on sound science." FRA
- "Because the conservancy district survives primarily by shifting responsibilities onto others. That's how they have survived for eighty-five years and its not going to change." NFA

- “Honestly it has to do with them being given a 180 degree different directive at higher political levels, so a really good example was, and this was about a year ago, they came and they made a really hard pitch that they were going to be *the* agency that should manage the RIP. They had presentations they had handouts, this has been done elsewhere, this is the best way to go and there was severe push back because all of the non-feds don’t want to have a federal agency involved in it” NFA
- “Are there trust issues within the Collaborative Program? Yeah for sure there is, especially between the ISC and the service, there are some others. The District doesn’t really trust anybody. And I am not picking on anybody. If that’s the way they choose to run their program and operate in the Collaborative Program then okay and that’s what the rest of us have to get around.”NFA

Individual personalities

Non-federal entities especially emphasized the importance of personalities to dynamics in the Program. On several occasions these were implicated in broader conspiracy ideas, perceived problems of discount rate and general dishonesty.

- “...and whether or not when somebody says something, is it really what they mean or is there some kind of maneuver involved, you know its constant kind of calculations that are involved you know. So there’s also thematically, there is the difference between what an agency says it needs to do in terms of its policies or its party line and then how it is that the individuals themselves carry that mandate out. So sometimes you’ve got an agency that really is difficult to work with but you’ve got some people in there that are willing to kind of overcome that on an interpersonal level and you can get further. And it can be completely the opposite way around where you’ve got agencies where their mission is kind of down the middle...but there individual actors are, you sometimes wonder if what they are saying is just constantly their personal opinion or whether they are speaking on behalf of the agency. And so there’s this frequent thing that somebody will come to a meeting and say well this is what we are going to do and then you find out that behind the scenes that they are saying the total opposite to people or they have subcommittee meetings and they are saying one thing in front of a big group and behind closed doors in a smaller setting, you know its just on and on and well, how do I know what, who the real whoever is?... I have tried to follow the statements of different people in different settings and finally figured out that there are people who are just damned good at saying totally different things in totally different settings. Its amazing to me.” NFA
- “... is an extraordinarily political guy who does not live within the benefitted area of the district.” NFA
- “... you can’t tell me that if someone in her position wanted to put the cards on the table she could either do it or if she didn’t have the authority to go to someone like John Doe and say to make this work, this is really what we need to do and do it.” NFA

6.3 Relationship/Interest/Pressure Intersection: Power/Advantage/Cost

Integral to relationships and Program structural elements that affect incentives to invest in the MRGESCP are three interactive factors of power-, advantage- and cost-based incentives. Each of these factors came from one of the three divisions of this study's Analytic Framework: relationship, interest and pressure respectively. They are presented together before explaining pressure-based incentives (following *Figure 4*) to explain how they affect Pressure-based incentives that in turn affect the structure of the program as a whole.

6.3.1 Power Dynamics Based Incentives

POW

Important power-based incentives exist for the federal regulator, action agencies as well as existed for former Senator Domenici in how to initiate and manage the Program. For the Service, the power lies in having ultimate say in how compliance for the ESA will be met by all regulated parties. For Reclamation, power exists in deciding how and what to fund as it supplies much of the current Project funding. For Senator Domenici, senior senator and Appropriations Chair with strong ties to the State and City, power lied in the ability to draft legislation that superseded the court and exempted action agencies from litigation under the 2003 BO. These three factors have a lasting influence on the structure of the program and thus advantage and integrally important, cost provision:

- “as an example with FWS...they can mandate that water be used and the agencies that control water can just be told.” NFA
- “The ESA says thou shalt and they can require pretty much anything of the federal entities to make it happen but there is more leniency to the local entities.” FRA

- “We’re okay with reclamation using a \$9-10 million budget to fund projects, but the problem is of course, they have kind of veto power I guess on what that could be used for the funding is.” NFA
- “Pete Domenici’s connections to Albuquerque were deep he owned property here he had been a CEO of the city of Albuquerque, he was a speculator in real estate here in Albuquerque, a lot of things about Pete Domenici...” NFA
- “Senator Domenici was very instrumental, basically I think he ordered us all into it. Okay, he said, here’s a way for you guys to all play nice and get along and do it. .” NFA

6.3.2 Advantage Based Incentives

ADV

Advantages that exist under the current structure, not only of the Program, but the entities at the table provide certain kinds of advantage within the framework of the program. These were identified by partners as:

- Distribution of responsibility among all partners
- Legislated exclusions of water resources that alter cost apportionment and parity differentially among stakeholders
- The regulatory hierarchy which offers the Service disproportionate decision power and
- The accountability structure of the program or various partners -some agencies are not easily held responsible for their activities.

In the case of the Corps an advantage may be in their limited involvement in water operations:

- “Problems with the species occur largely when the system runs out of water, referred to as the lower end of the hydrograph. Corps authorities really deal with the upper end of the hydrograph when there is too much water in the system, aka flood control. So clearly over the last ten years, the minnow and the flycatcher are in trouble, not because of large floods, but because of lack of water.” FRA

Distribution of responsibility among all partners

Distribution of responsibility is an advantage in that it allows the entire Program to attend to problems that may be caused by a single party that would have originally been that party’s duty to reconcile. As is shown in the cost section below, nearly all program

costs are borne by the federal government. This may alleviate direct costs to individuals whose activities may be responsible for species damage.

- “We got to the point through the lawsuits where the BOR, FWS and Corps, the three fed entities and the district and the ISC, the two principle non-fed entities came to the conclusion that somehow we could enter this collaborative program.” NFA
- “...the RIP as being something like setting up an insurance pool. So all of the agencies, all of the signatories are in as far as their liability, but what kind of coverage you get and how is radically disproportionate.” NFA

Legislated exclusions of water resources that alter cost apportionment and parity differentially among stakeholders

As described previously, the minnow rider provided specific advantage to the users of SJCP water which could be leased to the federal government. This gave them a source of funding, protected their water uses and, some believe shifted the burden from all water users to agricultural users. Since most of the water used by the Program has been SJCP water, it also shifted a large amount of the funding burden to the federal tax payer and away from the non-federal water user. It sheltered all parties to the program from outside litigation through the end of the 2003 BO on March 16, 2013.

- “(Reclamation) may not use discretion, if any, to restrict, reduce or reallocate any water stored in Heron Reservoir or delivered pursuant to San Juan-Chama Project contracts, including execution of said contracts facilitated by the Middle Rio Grande Project, to meet the requirements of the Endangered Species Act, unless such water is acquired or otherwise made available from a willing seller or lessor” (H.R. 2754-23§208)
- “Complying with the reasonable and prudent alternatives and the incidental take limits defined in the Biological Opinion released by the United States Fish and Wildlife Service dated March 17, 2003 combined with efforts carried out pursuant to Public Law 106-377, Public Law 107-66, and Public Law 108-7 fully meet all requirements of the Endangered Species Act” (H.R. 2754-23§208)
- “...Domenici. So he went, to protect Albuquerque, he put a rider in on an appropriations bill that specified the SJCP water could not be used for endangered species, he took it off the table.” NFA
- “...because it (Use of SJCP water) was the first time that agriculture had ever been, had any kind of parity with cities. Always in these things, agriculture pays,

and cities are the junior users and vote to have this crap in here and feel no pain from what they vote for.” NFA

- “Reclamation’s primary contribution to the species is to take SJCP water and run it down the river to maintain flows in the summer time. Its SJCP water.” FRA
- “A lot of that water was leased or used by Reclamation.” FRA

The regulatory hierarchy which offers the Service disproportionate decision power

The Service’s advantage is simply that it is the regulatory agency. As a partner, it has a disproportionately powerful role in that it signs off on Program activities and their compliance with the ESA.

- “...FWS who has almost ultimate control in a regulatory sense but doesn’t have to give up any resource what so ever in the process.” NFA
- “FWS, there only downside is that if the whole thing blows up, they might be accused of having caused it to blow up, but they don’t have water using constituents, so they can mandate that water be used and the agencies that control water can just be told.” NFA

The accountability structure of the program or various partners -some agencies are not easily held responsible for their activities.

Another form of advantage experienced by some partners is in a lack of accountability. Most notable is the MRGCD, which is most often cited as unaccountable. This serves to their advantage in that they are not easily litigated against. From both ENGO and irrigator perspectives, this is sheltering to the MRGCD. For ENGO’s, Reclamation is a better target with deep pockets, federal agency mandates under the ESA and potential ability to alter MRGCD water use. For irrigators, the complication is the lack of adjudication on the MRG. The MRGCD distributes what some believe to be senior appropriator’s water for species needs, while requiring end of season shortage sharing between junior and senior users. This is technically illegal and the lack of public records kept by the district is seen as an affront to senior right holders. Unfortunately, the

State of New Mexico is committed to not starting the adjudication process in the MRG and therefore cannot enforce priority.

- “The MRGCD may have control over a lot of the water, but they aren’t going to give up anything for the sake of the program succeeding. Zero.” NFA
- “They are quasi-municipal they can tax people, they can undertake, any kind of construction process on their own likes, and they don’t have that NEPA (requirement), you know (to) have to demonstrate that they’ve got the best alternative and that its not going to damage the environment. They don’t have that responsibility. So in a way its structure is kind of a Frankenstein. To whom are they accountable? Looking at things today they’ve got this elected board so there’s a lot more accountability evident in 2013 than there was in 2003.” NFA
- “MRGCD is a black hole, they don’t keep public records of water they release for species needs.” NFA
- “The conservancy district survives primarily by shifting responsibilities onto others. That’s how they have survived for eighty-five years and its not going to change...I mean it is in the gene pool, it is baked in the cake over there. I don’t care if you are reading some document from the 1930’s, 50’s,70’s, 90’s there are always saying that ain’t our problem.”NFA
- “They are in a unique position, they have never really had to answer to anybody because their return flows either do or don’t get down to Elephant Butte, ring the compact bell and all is well. They are not competing with anyone else. There is no accountability they have with anybody else about their water use. So since the 20’s their operating paradigm has been take it all and let the return flow go to satisfy the state’s obligation.” NFA
- “There really isn’t kind of a convenient (legal) handle on the district and then another thing is unlike a typical irrigation district that’s created at the behest or with cooperation of Reclamation, this was a creature of state law that has broader powers and a different organizational structure than an irrigation district.” NFA

Reclamation is also cited as having an accountability related advantage in that it controls funding with very little outside oversight on where the money is spent. In this their inefficiencies are less likely to be controlled by other entities in the Program.

- “The second problem is that the federal end, a tremendous amount of money has been directed toward the program from federal sources and when going through the Bureau’s contracting arm, it has a remarkable propensity to disappear...there isn’t any accountability, trying to see where the money went is an impossibility right now.” NFA

- “So I think part of it is that federal, you it just gets, it starts here and its just shrinks. And then in the end, when it finally gets funded, nobody even knows its been funded, nobody knows what its been funded for, nobody knows what direction its going, so there’s all these real issues that I don’t know how to fix, because I’ve been spending years trying to fix it with Reclamation.” NFA

6.3.3 Cost Based Incentives (Pressure)

COS

Provision of cost is one of the most important factors in the incentive structure of the program. Integrally intertwined with the above factors of power and advantage, cost provision plays a fundamental role in the level of pressure the Program exerts on participants and influences the trajectory of the collaborative process. Participant responses regarding cost focused on two important dynamics. (1) cost for program activities is dramatically disproportionate with nearly all cost borne by the federal government. (2) federal control of cost has resulted in inefficiency and unfair control over the process:

- “...fundamental problems with the existing program. One of which is I believe the non-federal entities probably do not really pony up their fair share of cost. I think we have all, here’s this looking out for our own interests, I think we have all very successfully managed to shift all of the burden onto the federal tax payer. Sorry to say it, that’s what we do, but I don’t think its right. I think if we are going to be successful then more of the costs will have to be borne by the local interests. The second problem is that the federal end, a tremendous amount of money has been directed toward the program from federal sources and when going through Reclamation’s contracting arm, it has a remarkable propensity to disappear. It wouldn’t shock me to find out that maybe only 25% of the money that was directed into the collaborative program actually got used productively. A tremendous amount just goes to increasing federal staffing at Bureau and FWS. On the ground projects don’t happen all that much and when they do they are bloated with admin costs, so I see that as a big problem. So even though the Federal cost share is quite large what is accomplished with it is not.” NFA

Cost Share for the program was decided to be 75% federal and 25% non-federal based on an expectation that New Mexico’s small economy would not be able to support much more of a contribution.

- “John Doe, so he’s been co-chairing, but a lot of funding comes through reclamation and I’m not as up to speed on that but Reclamation does get funding that then gets channeled through the CP and then they fund different projects and you know reclamation actually pays for a bunch of FWS staff positions, FTE’s and things like that” FRA
- That cost share, I think there are a lot of good financial reasons for that, you know it might end up that there are higher contributions above and beyond 25%, anyway but we don’t have the kinds of industries that allow a 50/50, we are one small little state, not very rich, farmers, and so its difficult to conceive of how we would come up with more than that, plus so many of the problems are federal problems, to be honest, a lot of the construction stuff is what created the problems to begin with and I don’t think that’s fair, been really even acknowledged.” NFA
- ”I am not sure how that was decided, I suspect it was just sort of a general regulation. I have no knowledge of whether its something that is done 75/25 whether that’s just a matter of course for these kinds of things or whether that’s something special to this program.” NFA
- “I guess that my answer to that would be that the feds might be paying for the lion’s share but the non-feds have the lion’s share to lose. If the program is a failure so...” FRA

Some see this as fair as the origin of program costs are a federal law. However it is contended that non-federal actors have effectively claimed to be supporting 25% of total costs when their 25% contribution is for non-water, non-staff contributions.

- “Let me tell you the truth about that...the truth of the matter is, Reclamation spends money on water, personnel and then Collaborative Program activities. And there is only a small proportion of the activities that’s actually cost shared 25%. So when you look at the over-all budget, and I think they actually had some read-aheads when they, yeah I think its actually posted. But you can see the overall cost and how much the non-feds have contributed it’s a true cost share of about 10%. So amongst recovery programs that’s very unusual. Congress will usually, they won’t authorize a recovery program that has that cheap of a deal... its very different, and its just, its just New Mexico politics that on the one hand they can pretend its 25%, but you have to say, 25% of the non-water and the non-people activities and reclamation spends most of its money on water and people.” FRA

Senator Domenici’s role in Cost structuring stems from the passing the minnow rider, which made SJCP and Compact Credit water available for lease from willing sellers.

- “The minnow rider, says that Reclamation, well it says that the secretary shall create a collaborative program and an Executive Committee and a Collaborative

Program and any water that needs to be acquired for the purposes of the Collaborative Program are paid for by Reclamation.” FRA

Finally, it is stated that even the portion actually paid by the non-federal partners (ISC is the largest non-federal contributor) is actually federal in origin.

- “It isn’t an equitable distribution. I mean the feds pay 75% and the locals combine to pay 25% and whatever, that’s fine, but the only one that ever turns in any documentation that they actually need that 25% is the state of New Mexico and the state of New Mexico, all of the money spent on the collaborative program by the state of New Mexico including staff and on the ground projects comes from the federal government. Because it’s either through grants through the Collaborative Program for habitat restoration projects, things like that, or through the money that Reclamation pays to the state of New Mexico for its relinquished compact credits.” FRA
- The costs for running the program, are in the main, coming out of federal agencies, it’s mostly Bureau funding, the Bureau gets the direct funding and then administers the Program. Then you know indirectly there’s quite a bit of funding or parallel cost from like the Army Corps, and then the non-fed side is supposedly cost sharing and the ISC used to carry a huge amount of the cost sharing. But they have said you know times being what they are at the state agency level they can’t be expected to continue to carry the ball for all the non federal agencies as far as cost share.” NFA

Inefficiency on the part of the federal government is cited as equivalently unproductive. This appears to be an area where Senator Domenici was vital in steering the productivity of the Program.

- “I kind of liked it when we were able to earmark that money that Domenici was able to appropriate for certain projects because you knew that’s what it was going to get used for.” NFA
- “What can my agency do with \$600,000 to make sure that funding, you know projects get on the ground, projects get placed- a lot! So I think part of it is that federal, you know it just gets, it starts here and it just shrinks. And then in the end, when it finally gets funded, nobody even knows it’s been funded, nobody knows what it’s been funded for, nobody knows what direction it’s going, so there’s all these real issues that I don’t know how to fix, because I’ve been spending years trying to fix it with Reclamation” NFA
- “The CP did well for many years because of Senator Domenici’s direct intervention in federal funding procedures and apparatus. But now that’s gone. So

funding has gone down terrifically in the last couple of years since he's been gone." NFA

6.4 Pressure Based Incentives

6.4.1 Incentive Building and Mutual Gains Based Incentives

COV, INC

Coverage is a term that developed out of the interview process and was integrated into the Analytic Framework for the data analysis portion. It originally appeared as an answer to the question: "How satisfied is (partner) with the Program's ability to develop mutually beneficial options or exchanges that allow more investment or buy-in from various non federal partners?" The basis of the question was found in Ury and Fischer (1981) and referred to the process outlined in *Figure 2*. The process enables negotiated solutions that become mutually beneficial and "expand the pie" from the kind of zero sum bargaining that often results in insufficient solutions and continued problems for the negotiators.

The original theme code used to describe this kind of behavior in the Analytic Framework was incentive building (INC). When the question was asked, it was often greeted with negative responses. Eventually the word coverage was used to describe the antithesis of incentive building negotiation, which was to use the Program as legal and financial coverage for status quo operations of various parties while contributing as little as possible. Using the direct answers to the question above and broader references to some form of coverage, responses were gathered to reflect multiple perspectives on the how these two themes interacted. They are both considered part of pressure-based incentives as one shows a level of sheltering necessity to a given party (Coverage). The other (Incentive Building) could mobilize pro-active behavior based more on mutual

benefit and buy-in to a common goal than necessity to shelter. The latter is considered to be more effective in problem solving. Responses included:

- “There is certain momentum that gets developed that is good, but the real reason that everyone is there is to cover their own asses and people have a hard time moving off of that into a truly collaborative program.” FRA
- “Because we have our own BO, you know we’re real worried about that, we don’t want that thing to blow up because you know we don’t want our BO reinitiated, that’s just not a good way to do things. That’s another reason why we participate in the CP is to protect our interest within our own BO.” NFA
- “Mostly its coverage.” NFA
- “Who needs coverage and how are they going to get it.” NFA
- “I think as a collaboration we all can get protection that way.” NFA
- Kind of referred to now as the big six. It was the big five and then NMAG started paying more attention to things....But see we are the ones that have resources and we have missions.” NFA
- “Well first of all the ESA is a federal law so that subjection to the federal courts and all that stuff is not necessarily bad but that is the main concern.” NFA
- “You know the ESA consultation with the federal agencies, I mean they basically are the ones who have the primary responsibility for compliance with ESA and the move toward this RIP is partly to make it so that there is a more fairly distributed relationship there for compliance.” NFA
- “They would basically like to use the RIP to protect their water uses, current water uses and contribute a little bit to recovery but they lack this commitment.” FRA
- “Everybody is playing a game, trying to maintain what they, what rights and abilities they have, you know to serve their constituents and to meet these needs and collaborate and there is a balance on everybody’s part.” FRA
- “I mean we have as agencies we have all managed to come together and come up with a way to just keep the thing limping along.” NFA
- “I think a the hammer, I mean you either comply with the law or you don’t comply with the law. Hammer. I think you want to comply with the law, if you want to work together.” NFA
- “I think everyone has an interest in protecting their interest, and everyone also has interest in complying with the law. So those are two of the couple of things that keeps people together.” NFA
- “I would say probably not overall pleased.” NFA
- “The chiefs have to sit down and you know kind of the heads have to talk so that’s good too.” NFA
- “I think there’s a lot of resistance to moving forward and having some belief that some of the things were doing could do some good, there seems to be so much reluctance to actually do anything until we know its going to do good. So its more internal to the collaborative program that’s been the problem I think. “ NFA

- “Altruism? (Laugh) I think its risk management mostly, I think that’s what brings people to the table.” FRA
- “I think its umm, probably not very satisfactory and its probably getting progressively less satisfactory, and sort of approaching, my personal perception of it is that the program is verging on kind of imploding” NFA

One description cited benefits outside of coverage as more advantageous than collaborative:

- “People come to the table to feed. There was not a single participant at the collaborative program who doesn’t get money out of the program. They get projects funded. I mean there was a period of time where the environmental groups, there were some environmental groups there for a while, participating in scopes of work development and getting the contracts. When reclamation dropped the hammer on appropriate contracting processes and avoiding the conflict of interest of having a contract recipient having engaged in drafting the scope of work, that they are then responding to, when they dropped the hammer on that, there are no environmentalists at the table any more.” NFA

Over all, there appeared to be little in the way of collectively attempted expansion of options available. While the collaborative benefits mentioned earlier were able to bring together partners in cooperative work, most participants seemed dissatisfied, at least with the current levels of productive group behavior.

6.4.2 Discount Rates and Voice

DIS, VOI

Discount rate was an important factor as well in developing Pressure based incentives. “Skin in the Game” was referred to on a number of occasions to refer to a level of necessity. Various levels of need for coverage were described. In economic terms, farmers were considered by some to be the only entities with a direct connection between ESA compliance and their livelihoods. Agencies with little need for coverage or more limited interaction with species needs also pointed to the potential for variability in discount rate:

- “So everybody would have had to contribute if SJCP water was on the table and that, I mean how else to you get people at the table if they don’t have any skin at the game?” NFA
- “Its not that we haven’t really been willing or wanting to collaborate in this forum we just don’t have that much skin kin the game.” FRA
- “Exposure for coverage, the need to be in the program for coverage is not a really extreme need.” NFA
- “FWS, there only downside is that if the whole thing blows up, they might be accused of having caused it to blow up, but they don’t have water using constituents, so they can mandate that water be used and umm the agencies that control water can just be told.” NFA
- “...who does not live within the benefitted area of the District.” NFA
- “Cities are the junior users and vote to have this crap in here feel no pain from what they vote for.” NFA
- “You know and its hard for to tell with the federal entities have better than an obligation to fulfill a regulatory requirement, check a box off.” NFA
- “...when it’s a job that you walk away from at five o’clock and you checked off your box and there’s no real consequences.” NFA
- “You know Jane Doe? Okay, I don’t know if you’ve spoken to her yet. I’m going to use her as an example, she represents, in my opinion kind of where the rubber meets the road. She’s a farmer, a dairy farmer, so her livelihood depends on the water and umm I appreciate the fact that she brings that to the table, because she is having to fight through all these federal regs in order to maintain her livelihood. She’s got to deal with the ESA, she’s got to deal with the State and all of the people that kind of have their hand on the spigot if you will and so yeah so she’s got to be clearly involved with what goes on with respect to the ESA because its her livelihood” FRA

Voice (VOI) is a theme that signified an important “representational role.” For instance, a party with either limited or duplicated stake in Coverage, either for structural reasons or based on alliances with other entities, could be driven to participate by the need to have input on a given situation. In the next section these players will be described in terms of their subject positions to avoid confidentiality issues.

6.5 Combined Subject Positions

The results of coding analysis for this study point to some important incentive based elements experienced by the parties in collaboration. As stated by participants in

the previous sections, disparities exist between the need for coverage, control of resources and the reasons for being drawn to the program. These disparities divide Program participants and show differing orientations of stakeholders to the Program itself and various members' participation in it. Coding took into account not only the Analytic Themes described in the previous four sections, but also their intersection with combinations of subject positions that characterized stakeholders.

Subject positions applied to stakeholders were:

FRA Federal Regulatory/Action Agency

NFA Non-Federal Actor

SNC Strong Need for Coverage

WNC Weak Need for Coverage

EXST – Has some exogenous/internal structural advantage

RESources- Has resources, either water, land, monetary

DUPlicative- Disadvantageous or secondary (less influential) dual representative

These characterized stakeholders in seven subject position categories:

1. FRA, SNC, RES, EXST
2. NFA, SNC, RES, EXST
3. NFA, WNC, RES, EXST
4. NFA, SNC, RES
5. NFA, SNC, DUP, RES
6. NFA, DUP, EXST
7. NFA, DUP, RES, EXST

These subject position combinations and their intersecting relationships with incentive themes from previous sections is described in Table 2 below. Some interesting relationships are visible between various stakeholder orientations. The following quotes are labeled with the applicable subject position category. First, there are those

participants that made comments regarding “who has a rightful place at the table” based on resource control and “agency mission”:

- “I think as a collaboration we all can get protection that way, but a, it’s like a, having negotiations, two party negotiations, but each and everyone has to give in something or work on something, sometimes we negotiate with a party who has got nothing.” 2
- “Probably the trickiest issue is the Pueblos. How many pueblos do we have as signatories is it six, five? That’s a lot of members. That’s a lot of people that show up at meetings and have a vote in the process. Should they choose to have it, but, and the Pueblos have hard resources, okay? They have land along the RG, they use water from the river, they’re technically a stakeholder, but at the same time, the federal agencies have that federal trust obligation to look out for the Pueblo’s interests. Okay and so the factual result of that is in the program, the Pueblos are stakeholders, but they are looked out for by another stakeholder.” 2
- “Okay Jane Doe, who we all know and love, okay she is a great voice, we like her in those meetings, but, along those same lines, the MRGCD is obligated to look out for the land and water resources of middle valley, water resources of irrigators, okay, so the MRGCD are already looking out for her interests. Why should she therefore be present at these meetings and participate in this process” 2
- “There are too many groups in the program that don’t offer anything. I’ll just be blunt. But they can come to the EC and tie the works up. You know and that’s, I don’t think that’s right. I think you want to have stakeholders, but you want to have stakeholders that are able to help solve the problem and not just obfuscating the problem.” 2
- “I generally think or we generally think its better to be as inclusive as we can but, if all you can contribute is occasional attendance at meetings, is that the equivalent weight of the FWS or Reclamation?” 2
- “We feel that one individual farmer or one individual pueblo that can tie that up is probably not the best way to be collaborative.” 2
- “For me the path forward is kick everybody out and just work with the Feds. They have got there responsibilities under the endangered species act so lets just work the system that way, the rest of this system is just a mess. These people wanting to poke around and cause problems and they don’t contribute anything.” 1

Statements in this vein were not ubiquitous across these subject position categories (1 and 2). In fact some participants within these categories strongly believed that the Program’s and their agency’s missions dictated a more inclusive role to play. What was

ubiquitously true for them however was that none mentioned the potential failure of the Program, that they directly considered viable legal options outside the Program, or that collaboration in this context was bound for failure as a means of recovering species and changing the status quo.

Table 2: Combined Subject Positions Intersection Matrix

<i>(Mobilizing Factor)</i>	FRA, SNC, RES, EXST	NFA, SNC, RES, EXST	NFA, WNC, RES, EXST	NFA, SNC, RES
Advantage related	Fed. Law Relations, Minnow Rider, Op. Authorities, Coverage	Separate BO, Minnow Rider, Op. Authorities, Water, Economic, Coverage	Limited Need for Coverage, Op. Authorities	Resources, Op. Authorities, Coverage
Program related	Coverage, Political Relations, Facilitative	Coverage, Political Relations	Representation in Process, Facilitative	Representation in Process, Facilitative
Power related	Control of Trajectory, Outcomes	Control of Trajectory, Outcomes	Control of Trajectory, Outcomes	Control of Trajectory, Outcomes
Relationship related	Political, Collaborative, Trust	Political, Collaborative, Preservative	Political, Collaborative, Preservative	Political, Collaborative, Preservative
Cost related	Distributive, Facilitative	Preservative, Conservative	Preservative, Conservative	Preservative, Conservative, Facilitative, Distributive
Preservative	Env., Budgetary, Political, Legal	Resource, Budgetary, Status Quo, Tradition, Municipal, Legal	Budgetary, Env. Municipal, Legal	Budgetary, Legal, Resource
Incentive Building related	Political, Collaborative, Trust	Collaborative, Preservative	Collaborative, Restoration Oriented	Collaborative, Restoration Oriented, Preservative
Collaboration related	Political, Integral Interdependence	Mutual Benefit, Preservative	Mutual Benefit, Representational	Mutual Benefit, Preservative
Social concern	Integral Interdependence	Preserv., Conserv., Municipal, Traditional, Economic	Municipal	Preservative, Legal, Traditional
Environmental concern	Primary to mission under ESA	Heavily Influences Mission	Municipal, Social	Preservative, Legal, Social, Proactive
Representation related	Meeting, Enforcing Compliance, Coverage	Coverage under ESA, Legal	Administrative	Administrative, Legal
Coverage related	Mandatory	Legal	Limited, Representational	Legal, Preservative
Discount rate related	Mandatory	Legal	Municipal, Representational	Legal, Representational

<i>(Mobilizing Factor)</i>	NFA, SNC, DUP, RES	NFA, DUP, EXST	NFA, DUP, RES, EXST
Advantage related	State Water Rights	Fed. Law Relations	Fed. Law Relations
Program related	Representation in Process	Representation in Process, Facilitative	Representation in Process
Power related	Control of Trajectory, Outcomes	Control of Trajectory, Outcomes	Control of Trajectory, Outcomes
Relationship related	Political, Collaborative, Preservative	Political, Collaborative, Preservative	Political, Collaborative, Preservative
Cost related	Preservative, Conservative	Conservative	Preservative, Conservative
Preservative	Resource, Tradition, Legal	Env., Budgetary, Legal	Resource, Budgetary, Legal
Incentive Building related	Collaborative, Preservative	Altering Status Quo	Collaborative, preservative
Collaboration related	Mutual Benefit, Preservative	Env.	Mutual Benefit, Preservative
Social concern	Preservative, Traditional, Economic	Env., Altering Status Quo	Preservative, Traditional, Economic
Environmental concern	Legal, Preservative, Traditional	Primary to Mission	Traditional
Representation related	Traditional, Economic, Preservative, Legal	Env., Legal	Traditional, Economic, Preservative, Env., Legal
Coverage related	Legal, Preservative, Traditional	Limited, Representational	Legal, Preservative, Traditional
Discount rate related	End User, Critical Economic	Environmental, Representational	Traditional, Representational, Legal

Statements made in regard to program failure or possible non-collaborative options led to interest in another phenomenon operating in the Program, that of duplicate roles as identified in categories 5,6 and 7. Each of these players occupied or could occupy an alliance with a (politically, financially, or in terms of resource control) stronger stakeholder. Where there was strong disagreement over how a particular constituency or position should be represented, the alliance was either wary or openly adversarial. Where the alliance was not adversarial, it had the potential to be symbiotic in terms of combined voting power. These relationships could possibly vary on an issue to issue basis. Another category existed in which overall need for coverage was minimal and in certain legal scenarios, exposure would be increased by participation in the Program. Combined, these categories' participants held some of the strongest criticisms of the Program and their participants spoke in terms of viable alternatives to collaboration. These stakeholders were commonly those that expressed a program related concern that was representative (Voice) which more effectively defined their roles.

Importantly, these entities for which the Collaborative Program was questionable, had one or another system of "Rule of Law" regulatory structures: either environmental, prior appropriation, or federal trust authorities to fall back on in litigation. This places the MRGESCP squarely in the dilemma expressed by Karkainen (2002, 2008) and others in chapter 3.3 of this study.

6.6 Adaptive Management/Scientific Legitimacy

In 2009 the program adopted AM as the means by which it would conduct the RIP science program. A contracted entity performed the design and development of the program's AM Plan Version One as a template for a Version Two to be completed by the

program signatories at a later date (MRGESCP 2011). There is a conflict within the program over validity of science, availability and propriety of data and generally, from participant responses, a lack of clear understanding of what species really need.

- “I think the program really has to look at reality. And I don’t think so many of those people are looking at reality, they are just looking at what the biology of the fish needs, but there are no reality, is it all what we need is available or not, so program has to look at those realities first. You may think that this is what the needs are but hydrologically or any, the way may not be possible but we have to find other solutions by which it could survive through those critical times.” NFA
- “That’s true so ten years, ten years ESA process, spend 100 million dollars and still we are not anyplace.” NFA
- “The issue of the fish biology is I think worth considering too, I think the low spot appeared to be around 2002-3. But the Question that I have always had is: is that really the low spot? Because monitoring only goes back for a relatively short period of time and there is this kind of implicit assumption in FWS and a lot of the ESA arguments that the population was always here. Okay and we started looking at the population and its actually down here and its working its way down a little bit lower but there...There is no baseline. My personal opinion on it, being a non-biologist is just an opinion, it doesn’t have any weight is that population probably tends to do this naturally over time.” NFA
- “I actually think the species is not necessarily endangered in the middle Rio Grande right now, any more than it was thirty years ago or forty years ago.” NFA
- “There is no science behind the 2003 BO. It appeared literally over night.” NFA
- “And they maintained incredibly high flows because they didn’t know what a desert species was and they treated everything like it was a cold water trout.” NFA
- “If you talk to some of the folks there about Dan Goodman, I think he was the first time that we’ve had any kind of scientific credibility in the program.” NFA
- “I think because a lot of people complain that what the service has been mandating is draconian and not based on sound science.” FRA

AM is considered by all participants to be the mechanical “step in the right direction” that the program needs to achieve clarity of science and decision protocol. This is conditional “if” it is implemented correctly. This “if” leads the program into another problem area. While each participant answered that it was certainly a good idea and

useful paradigm from which to manage, nearly all participants felt that success was likely dependent on the way it was implemented.

- “I think AM will be the saving grace of this program if it can be employed properly. Everyone is talking about it right now. No one in my opinion has actually employed it here.” NFA
- “When it is implemented and becomes part of the culture, you know we’ve paid for several meetings and a report to try and get to AM. So now the funding for that has kind of gone away so we will try and do a lot of this ourselves. AM is important, because if you can set down a set of scientific questions that you need to answer, to recover the fish then you can implement them and monitor them and change as necessary and once something works or doesn’t you can get it out of the program.” NFA
- “AM in General has got to be the answer for the RIP, we have to be able to change our ways of management depending on what the climatic situation is as well as you know what we have learned with the fish or you know what we’ve done differently among water management.” NFA
- “I think its much more effective if we are doing AM in habitat restoration or monitoring. But at this point it looks like the only form of AM that we are actually trying to initiate are like “how do we run meetings?” And I think you could just go to some sort of meeting management school to learn how to do that. So to me that really doesn’t qualify as AM. They call it that but, they call it that.” NFA
- “Done correctly and embraced it is the absolutely the only salvation in my opinion.” NFA
- “I just think it’s a step in the right direction, I don’t think it solves anything but I think that having a formal role for the scientific process just has to be helpful.” FRA
- “Absolutely, I think that AM would get us to hopefully a place where people agree more on what the fish needs.” FRA
- “It will definitely be, problem is how do you do it?” FRA

Some believed that it would not be possible to attain the level of methodical AM implementation discussed in literature.

- “I think that there are a lot of different views of adaptive management and I think that you know, my view of the strict, must hypothesis test everything, is not

where we are probably going to be able to go because we are not going to have the money to conduct a lot of, and I don't even know how to set up a lot of those hypothesis testing because." NFA

Some believed that the way the federal government applies AM is insufficient. Many made some statement about its success being dependent on what "they" believe AM is - alluding to suspicion about how politics could affect implementation. Indeed, by the end of the data collection process, participants were being asked to define AM. Most federal and some non-federal participants gave a similar definition to that applied in the literature review of this study. Some however, even if it appeared that they knew that definition, defined it as reactive adaptation. Other participants freely admitted that they were not confident everyone was on the same page. Entities with more or less confidence in the program stated that AM was likely to manifest as influenced by the core power struggles and politics of the program whether or not it was a useful paradigm. Obviously the prospect of AM will have its challenges as it proceeds.

- "Well, you have to understand what adaptive management means to each and every one of them, they all think different things, to me it means different things, to the federal government its different too?" NFA
- "To us it means we adapt to the new environment, new resources, new processes. That's what adaptive management means." NFA
- "AM is a very methodical structured process of hypotheses analysis and testing. Its very deliberate and measured and I continue to see people in the CP treating it rather superficially, just tossing it out as kind of this "oh we're just going to do AM" and a lot of the people I think toss that out and most of the people that here it think its well you try one thing and if it doesn't work you try something else." NFA
- "The program, the EC has committed to AM and exactly how that may look and exactly what might be the results from that I don't know." NFA
- "All adaptive management really means in my opinion is having the flexibility to adapt to the existing conditions." NFA

- “Sounds good on paper. In practice, I think the way it gets implemented by federal agencies is let us be adaptive, its juxtaposed to prescriptive management and I think AM that has as its cornerstone, prescriptions is fine.” NFA
- “There’s no accountability frankly, because the adaptation is not to new science, the adaptation is to the political and economic forces.” NFA
- “I mean because in the past people have said the minnow, you know they just burrow in the sand and they can live in the sand (laugh) and its not like that. That’s not true. They need water.” FRA
- “To me you know we all adaptively manage every day in our lives, you know you try something, it doesn’t work, you try something else.” FRA

7. Discussion

The origins of the program do begin with something like Karkainen's (2008) destabilization events. Initially, the listing of the Rio Grande Silvery Minnow and Southwestern Willow Flycatcher brought federal and state agencies to the table with water appropriators to develop solutions to species problems. Environmental groups took their lead in developing more ambitious strategies and the two groups met for over a year in collaborative development of solutions. "Things got more serious" when the environmental groups sued the Reclamation for failure to consult under Section 7" (NFA). Litigation brought by water users contesting the Reclamation's ability to take SJCP water to supplement environmental flows increased tensions and some saw the need to attend the issues in another way. Senator Domenici stepped in to draft the rider that would require the collaborative program's inception.

The existence of the superordinate goal is obvious in some participants' enthusiastic recollections of the initial mood under Senator Domenici's involvement. "Yeah we can get this done in ten years and the whole edict was, Senator Domenici was like we are going to get this problem solved in ten years damn it and move on" (NFA). But, the 2003 BO made participation in the program the requisite (among more specific activities under the RPAs) for coverage under the ESA and the Senator's rider itself removed some very important components of structural pressure on participants to collaborate effectively. First, negating the court decision that Reclamation had legal right to divert SJC water from contracted recipients to endangered species did several things.

- (1) It changed the dynamics of cost share moving more of the burden to the federal side.
- (2) It removed a resource that some participants felt offered the only parity between

agricultural and municipal water interests in that both had stake in that particular project's water. Making SJCP water a monetary advantage increased the Water Utility's advantage over the MRGCD's and its constituents' because native⁶ Rio Grande water was not stipulated to be available on a willing seller basis and the MRGCD gets much less of the SJCP than the ABCWUA. While the MRGCD is shown to have its own means of deflecting responsibility in Chapter 6.3.2, water rights holders view SJCP water's "off the table" status as unfair and dangerous to the future of agriculture itself in the MRG. The MRGCD is said to deliver water for species needs and for Bosque del Apache National Wildlife Preserve without legally mandated consideration of prior appropriation. This is even more complex in light of the fact that the MRG is unadjudicated. This is the origin of conflict over MRGCD's record keeping as native Rio Grande water rights are owned by assessment paying irrigators.

Second, the rider sheltered federal action agencies from litigation. Sheltering factors are said to be culpable in a lack of real solutions and creative thinking coming out of the long term process as well as specific infractions such as the failure to complete fish passage by the 2008 deadline under the 2003 BO.

While these interventions are the kind of protections that might have been seen as necessary for buy-in so that collaboration could initiate, in the long run all of these sheltering alterations have reduced the level of pressure and thus incentive for individuals to actively and dynamically seek solutions. Finally, it is said that restructuring the program to emphasize the importance of parties with hard resources in negotiation "hardened" the program into a "more federal-like bureaucracy" (NFA). It is said that the

⁶ Native in this context refers to water and rights to that water that are of and originate in the Rio Grande Basin as opposed to water from trans-basin diversions such as the SJCP.

Senator's office was convinced that the more-diffuse collaboration of the early days was spending too much money and was not able to generate the results needed in a timely manner. While a logical conclusion, some parties feel that this emphasized a split between certain kinds of stakeholders and is one responsible factor in the conspicuous lack of ENGO's at the collaborative table.

David Freeman (2010) signifies the need for periods of "regulatory cruising" where stakeholders are able to stave off commitment of hard resources for long enough periods to create coalitions that equalize or elevate incentive to participate among parties who may not have incentive but could de-rail Program progress. It appears that in the MRGESCP, this has been complicated by the reduction in pressure mechanisms that would eventually force various groups to "pony up" resources. It has not been possible to secure the support of ENGO's and some trust relationships among non-federal actors within the program are very much on a verification basis. Some if these dynamics were described as potentially inducing program failure.

In terms of how the group has generated institutional supply, Ostrom's questions for evaluation of institutional supply reveal important elements of the investment capabilities of the MRGESCP. As to *how many players are involved*, there are sixteen program signatories at the time of this writing. While this is not a terribly unwieldy number, there is debate as to how many should be involved and this debate seems to stem from the power disparities established above and has much to do with *internal group structure*. Most players exist somewhere within a hierarchy of authority, capacity and political advantage with variable discount rates, sheltering advantages and need for coverage. While some clusters of signatories can be made based on similar hierarchical

levels there is little in the way of equality that can be drawn across the entire table. More logical than seeking to evaluate equality within the MRGESCP, is to take a look at what is actually still a top-down governance structure in a state somewhere on the way to being a forum for equality. The focus of inquiry should then rest on nested symbiotic, quasi-parasitic or adversarial/ alliance relationships between partners and to the program itself.

This inquiry can be accomplished with another of Ostrom's questions, *who initiated the process?* Or importantly in this case *what?* The ESA and its implementing agency are the initial impetus for the existence of this program by way of litigation generated and the intervention of powers at the congressional level. If we ask *who paid costs of entrepreneurial activities?* We begin to see how these relationships interact. It is said that the Bureau of Reclamation carried the weight of the federal 75% of the cost share. The ISC supplied most of the 25% of the non-federal cost share but reportedly makes a portion, be it large or small of that from Reclamation to begin with. Coupled with the stated reality that cost share refers to Program activities (non-water, non-people) while the dominant spending categories are water and staff, the non-federal cost share, by a separate account is around 10%. The accuracy of those statements is certainly disposed to disagreement but, by and large, the top-down nature of the authority hierarchy is mirrored by the top down nature of the funding structure. Because this is an arrangement structured as a zero-sum bargaining forum, the object of the regulated parties, as stated above by a non-federal collaborator is to shift as much of the burden as is possible onto the federal tax payer. These factors produce allegiances with duplicative voices in symbiotic cycles of support such as the participant-described relationship between the Bureau of Reclamation with its Tribal Trust obligations and Pueblos who reportedly tend

to favor Reclamation's positions. It produces adversarial or wary alliances where duplicative voices disagree about the fate of a commonly represented resource such as that of the APA and MRGCD. Finally, it creates a general atmosphere of quasi-parasitism as regulated parties vie for regulatory shelter and economic support for their activities while producing the least possible contribution instead of all parties laying down their cards to attempt the productive problem solving that would heal the problems that enlisted them to begin with.

To answer *what kind of information do participants have about situation?*: information is a key issue when it comes to disputes about science and data management especially in regard to who controls the science. It is a contentious issue within a number of ESA based collaborations beside the MRGESCP that the regulatory body also produces the science by which regulated actions are evaluated. But as Freeman (1997) suggests in Chapter 4 of this study it is the same top-down, zero sum structure that inhibits the regulatory agency from rescinding control of that position.

Information also comes to play in regard to *risks and exposures* experienced by the parties involved. The legacy of state and federal interaction in control of water resources manifests here with regard to the MRG in the title dispute between Reclamation and the MRGCD. It also influences the strong distrust between FWS and the ISC and New Mexico Attorney General. Each side would tend, in the absence of collaborative benefits described in Chapter 6, to protect itself with dispensation of as little information as possible. If FWS becomes completely transparent with its scientific procedures and data, it risks being accused of ulterior objectives. If the MRGCD begins to accurately account for its water dispersal for species needs, it will open itself to

litigation from farmers though, on the MRG, their recourse through state adjudications to enforce prior appropriation may be limited by the absence of such adjudication on the MRG.

Highly important in regard to risks and exposures is the dominating incentive of coverage pursued in various ways by partners in positions of influence to maintain a status quo in their operations upset by the ESA.

The MRGESCP has both benefitted from and is systemically hindered by *external institutions*. In benefits, the species of the MRG have a mechanism for protection in the ESA. Appropriators have an opposing but similarly protective mechanism in state law. The program receives funding from federal sources and received leadership and direction from congress when Senator Domenici was involved. In hindrances, the same protections are divisive and, the guiding hand of congress appeared to, in short-sightedness relieve the program of some of its mechanisms for investment mobilization. It did so under bias that redistributed risk and incentive in unproductive ways.

Possibly more importantly is the structure of responsibility under the ESA. First, the ESA has regulatory “teeth” to attack only a narrow slice of the problem at hand with the endangered species of the MRG. First and foremost it only attends to continued involvement of federal agencies in actions that jeopardize endangered species⁷. On the MRG, this results in a reduction of the ESA’s scope of influence to water management. This is necessary, but ignores the fact that the habitat modifications that have endangered the species to begin with are the result of activities that no longer have any federal involvement. The building of Cochiti dam or improvement of diversion structures and

⁷ Since non-federal actors are included in Section Seven consultations on the MRG, “take” under Section 9 is omitted from this discussion.

works and river channelization are all tasks that were completed long before the listing of the species. This sets stakeholders to a dynamic of denying responsibility for making fixes to those parts of the river that are geomorphologically altered by a century of completed engineering while asserting the ecological benefits of their water use regimes. These benefits include the existence of extra water in the stream from the SJC project, or various return flow contributions made by agricultural uses.

Second, in relation to scope, the ESA focuses on the MRG because of the existence of minnow populations there and only there at the time of its listing. While there are experimental populations in two other parts of the Rio Grande system in Texas and on the Pecos River, they are small in area. Thus the focus for species recovery is confined to around 5% of its original range. The effect on species throughout the Rio Grande system is the affect of the reduction of habitat in specific locations. In terms of a species ability to sustain indefinitely however, the “whole” of these habitats in specific locations is more than “the sum of its parts.” For millennia of unencumbered dynamics on the Rio Grande, genetic viability of these species was the product of their entire range. Focusing on the 5% of this range that the MRG constitutes is one of the factors that led some participants to characterize the minnow as a “conservation-reliant species” now and for as long as the river is managed for human uses on their current scale. Conservation reliance refers to the need for a species to be continually managed through human interventions. This is the case when a species’ habitat has been or will be drastically modified to the extent that recovery without continued intervention for an indefinite period is unlikely (Scott et al. 2005).

As described in Chapter 6, the MRGESCP contains two important dynamics that influence the Program's potential success and fit it squarely in the context of the collaboration versus "Rule of Law" dilemma. (1) The same conflict between resource extraction and biological diversity that fueled the 1970s legislative trend away from "interest group liberalism" and the formation of a rigid regulatory structure and culture is active in the MRGESCP. ENGO participants cited, almost verbatim, the concerns outlined by authors in Chapter 4. These groups are currently not a part of collaboration and the Program's tendencies as influenced by larger stakeholders have not convinced ENGOs that their thinking is incorrect. (2) Disparities in influence where duplicate representatives disagree with the more influential stakeholders about program trajectory are grounds for dissent. In the worst case, dissenting entities have legal options that threaten the program. This seems to require that the Program do what it can to alleviate dissenters' concerns. While many more influential entities cited the ideal that only those with "resources and missions" should participate in the collaboration, they neglect the reality that the resource held by dissenters is legal recourse and their missions may be rooted in very different discount rates concerning livelihood and biological health of systems that resource appropriators depend on.

8. Conclusions

The Collaborative Program, for its complexity and problems, still exists in a state where progress is highly possible. This study has framed the concept of stakeholders to the Program to include entities not currently signatories to the process. This is because they are included in a group of dissenters and possible dissenters within the Program that have expressed grave concern for their position or for the Program. This concern is based on a divide over disparities in influence within the collaborative forum and can be seen on both sides of the social verses environmental interest divide. The problem for investment of institutional supply within the program is based on a mischaracterization of resources and missions as only those with value to specific entities. Because the divide could bring about litigation that threatens the Program's longevity, the situation fits squarely within the dilemma of "rule of law" verses collaboration. If it is a given truth among Program participants that the solutions that can be reached by collaboration are better than those that can be reached in another fashion, these issues of disparity in the MRGESCP should be attended.

Any solution to this problem contends with major structural difficulties. "We've got this single thread system, it's a zero sum game. Any water that goes through the ecosystem environment has to come from some other use right? So there are really limited options, you know a lot of systems, like systems on the west coast where there's multiple tributaries and they all have dams and reservoirs. You can do this various trading and you know nobody really has to sacrifice as much as they do here to meet those species needs but here, if there is going to be water in the river all the time for the species, somebody is giving it up" (FRA).

The Program is attempting to implement tools that are novel and still unproven in terms of long-term benefit. Collaboration, as described above is wrought with the dilemma of how far to move away from the system of rigid, prescriptive law that guarantees certain protections, but utterly fails to attend to the scope and complexity of environmental and social realities.

Adaptive management suffers from a lack of regulatory buttressing and as demonstrated in this process is hindered by politics, lack of understanding and possibly most important, the necessity of long term funding. Neither tool, however, can be said to be falsely applied in the MRGESCP. The problems posed for either tool by the MRGESCP are the problems posed for these tools generally. Whether or not the Program will become a RIP and survive this period of growing pains may be another question. Here it may manifest that these “new age” tools did not fit the specific circumstances of the situation and time. The problem then is how to solve the problems that the Program was conceived to attend to. According to participants, these tools are still the best option they can think of for the collection of interests at stake.

It was stated by one federal partner representative and one regulated partner representative that morale has suffered due to the amount of time and money put in to developing the program and saving the minnow, only to find that a decade later the minnow continues to suffer and the program is just as compromised as ever. It should be noted here that the program on the Platte River, which has now become the model for the MRGESCP (in its currently functioning state) is the product of litigation that originated in the 1970's. The program itself evolved out of relicensing problems that appeared in the

mid-1990's and the first MOA leading to what became the Platte River Recovery Implementation Program in 2008 was signed in 1997.

Since 2008 that program has had the opportunity to develop itself in functional form, in an adaptive science program with agreed rules, sufficient protections and a long history of collaboration of the parties involved. By the end of the first increment of the Platte River RIP, the endangered species issues on the river will be nearly 50 years old. In phases of its evolution that more resemble what the MRGESCP is going through now, it has been heavily, legally criticized and suffered from loss of environmental representation and numerous in-fights among resource appropriators who stood to lose by other representatives' ideas or actions. While the Platte will certainly have its challenges, its state is far different from that members of the MRGESCP encounter within their own program. But the point is that members of the MRGESCP should not expect at this time, that their problems' solutions will be expedited. It should also be noted, as some of its members have, that the species, social and political issues on the MRG are arguably more complex than those on the Platte. There should be an expectation that this will be a much longer, more expensive journey than it has already been.

It may also be time to realize that the only way to achieve something similar is to not only persist, but to alter the game from the current zero-sum, "shell game" it has become. Protections must be put in place on a conditional basis that protect the collaboration and not specific parties' interests while somehow recognizing each of these interests as every program member's personal goal. This may be the point at which the comments on leadership are most important. If the influential partners to the program are caught in a cycle of reinforcing their status quo operations, it may take substantially

charismatic leadership with some authority to enforce change upon these parties. On the Platte, protective guarantees took the form of ESA coverage for AM in the first 13- year increment, sheltering parties from sanction for specific hazards to species if they were effective through the AM mechanism in altering the circumstances that caused them (Freeman 2010).

Of interest in the interview process, was the strained buy-in exhibited about the various elements of proceeding to become a RIP. Participants seemed unsure of what lay ahead. The program has committed to follow the model of the Platte River RIP. It was noted in this study that multiple participants had David Freeman's book, "Implementing the Endangered Species Act on the Platte River Water Commons" on their shelves. Most notably was the fact that few participants had been able to read it. The book is a major contribution to this study and provides a comprehensive history of ten years of Program related negotiation. While this study finds some disagreement with Freeman's conclusions, many of which are un-tested in terms their actual success on the ground, it could be an invaluable tool to participants of the MRGESCP in developing the institutions at least by which to agree on process.

Finally, Even if the species are to remain conservation reliant, the need for river managers to learn how to manage "outside the box" is imminent. Already, the simple problem of water allocation is compounded by climate change. The principles in Bates (1988) and Ostrom (1990) in which soft communications enable reciprocal actions that allow institutional change must be implemented as they can be among the MRG players. Multiple suggestions are made by interview participants. In the words of one participant: "Let's do some things that are just good water management planning, even if there was

no endangered species here because we've got climate change, we've got drought, we've got things we've got to prepare for. Let's develop flexibilities in our reservoir operations and let's make sure that we can store any type of water in any of those reservoirs and we enhance the capacity as much as we can and then downstream, looking at the river below the San Acacia Reach, that river is perched. It's up above the groundwater. Connect that thing, then we'll use less water. There are things that people could be doing. But right now everybody's just focused on what's the structure going to be?" The point is that activity will enhance the ability of parties to contribute, if that activity is productive. Parties can invest and test, because only with maximum buy-in will collaboration be safer and the scope of real problems be attended.

The MRGESCP suffers from trust issues arising out of individual actions. But those individual actions are deeply affected and arguably required under the status quo elaborated in the discussion. Fault, while easily assigned based on simplistic precepts of honesty, is as much a structural, strategic issue as a personality issue. Remedies to individual personalities can only be attempted through buy-in of a core of constituents united against dishonesty. This core buy-in is hindered by the protective nature of parties in zero-sum negotiation. Altering the status quo greatly reduces the potential for its existence. This may have to be done in "out of the box", "what if there were no endangered species" ways as described above.

9. Limitations and Further Research

This research was limited predominantly by time. The sheer number of facts to be understood and the haphazard nature by which they were acquired or understood as interviews proceeded greatly hindered the research process. If this were to be conducted again, a much more comprehensive study of meeting minutes for several years, or meeting attendance for a longer period would be advisable. Many other meetings of the Program took place during this research, the Executive Committee meetings observed for this project were likely not representative of dynamics to be found in smaller breakouts of stakeholder groups. Finally, some stakeholders, due to time, limited contact with the researcher (trust), or other variables caused some perspectives to remain unaccounted for. It would be a goal of a repeated study to attend to as many perspectives as possible.

Analyzing mobilization of participation in ESA-driven collaboration in this way would optimally be done in regard to a number of other similar programs. The scope of a master's thesis is too narrow to produce a comprehensive review of multiple program histories, the regulatory and political climates in which they evolved, the variability in structure based on management, stakeholders, and species issues and numerous other components of ESA driven collaborative programs. Because of the interest and prevalence of collaborative processes in many scenarios it seems a relevant topic. This is especially true in Western water management, where these processes are overlaid with a rigid set of "rule of law" regulations that so constrain available avenues. A book length, comparative study of institutional supply mobilization in various programs would be appealing as a means of understanding similarities and disparities among the programs.

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11. Appendices

Appendix A: Analytical Framework, Interview Instrument and Final Codebook

Analytical Framework and Interview Questions

- Q1.** Interests: a) What is the mission of (Partner)? b) What has been the role of (partner) in the MRGESCP c) Is partner satisfied with this role?
- Q2.** How satisfied is (partner) with the program's ability to develop mutually beneficial exchanges/ options for the various partners?
- Q3.** How likely is it that all three of the MRGESCP's stated goals can be accomplished?
- Q4.** Are stakeholders equally burdened by the need for compliance? How has buy-in been achieved?
- Q5.** Does (partner) feel secure in trust relationships with other partners? How has trust been achieved?
- Q6.** Is the distribution of cost for the program activities fair? How was provision of cost decided?
- Q7.** Is adaptive management/ transitioning to a RIP beneficial to (partner)? Why?

Investment Mobilizing:

Interest Based

MI Environmental- including incentives that concern biodiversity, intrinsic value of the river system or species, or preparing the MRG ecosystem for bleak climate forecast. This is mobilizing depending on stakeholder orientation to the goals of ESA and or resilience based stewardship (Sax 2001, Chapin 2009, Craig 2009). *Q1.*

- **MI Social-** including incentives that concern the longevity of the MRG economy, traditional life-ways, camaraderie of entities involved in decision making (Chapin 2009, Fisher and Brown 1988). *Q1.*

Relationship based

- **MR Collaborative-** such that would-be adversarial interest-based goals and cooperative interest-based goals are simultaneously reached (Fisher and Ury 1981). *Q2.*
- **MR Program** related concern (Proactive)-such as the ability of the program partners to enhance relationships, to survive and function proactively toward the three stated goals of the MRGESCP or find replacements that offer some more feasible evolutionary state of the program or alternative (Fisher and Ury 1981). *Q3.*

Pressure Based

- **MP Incentive Building-** Inventing for mutual gains, expanding available options, cost share options (Ury and Fisher 1981) *Q2*.
- **MP Coverage-** Expansion or contraction of flexibility, discretion, need for coverage such that pressure increases/decreases (Doremus 2001, Freeman 2010) *Q4*.
- **MP Cost apportionment-** Engineering of fair shares to increase pressure (Freeman 2010) *Q6*.

Investment Hindering:

Interest Based

- **HI Preservative** (Protection) of a status-quo interest such as water supply, tradition such as agrarian or indigenous life-ways, or defense of some level of bargaining advantage (Freeman 2010). *Q1*.
- **HI Advantageous** such as economic gain, infrastructure maintenance/improvement, political gain, shelter from some form of individual sanction under the Endangered Species Act (Freeman 2010, Ostrom 1990). *Q1*.
- **HI Program** related concern (Status Quo) such as the ability of the program to survive and function less effectively toward program goals but in preservation of a given partner's interest (Ostrom 1990). *Q1*.

Relationship based

- **HR Power dynamics-** Dynamics are such that one or multiple groups' resources and incentives make collaboration less likely for other partners (Freeman 2010) *Q4*.
- **HR Trust-** Compromise between parties is hampered by damaged trust in relationships (Poitras et al. 2003) *Q5*.

Pressure Based

- **HR Cabining/Expanding of Agency Discretion in ESA administration-** Expansion or contraction of flexibility such that pressure increases/decreases (Doremus 2001). *Q4*.
- **HR Cost apportionment-** Engineering of fair shares to relieve pressure (Freeman 2010) *Q6*.

Final Codebook

Logistical

Observation

Interview

Document

Subject Position

FRA Federal Regulatory/Action Agency

NFA Non-Federal Actor

SNC Strong Need for Coverage

WNC Weak Need for Coverage

EXST – Has some exogenous/structural advantage

RESources- Has resources, either water, land, monetary

DUPLicative- Disadvantageous, secondary

Analytical (Incentives/disincentives)

ADVantageous

PROgram related (supportive/unsupportive)

POWer dynamics

RELationships (trust/structural)

COSt related (individual/programmatic)

PREServative (economic, tradition, status quo)

INCentive building (mutual benefit, exchange)

COLlaboration

SOCial

ENVironmental

VOIce (group representation)

COVerage

DIScount rate (Skin in game)

Appendix B: Index of Acronyms Used

AM	Adaptive Management.....	20
APA	Assessment Payers' Association of the MRGCD.....	17
BO	Biological Opinion.....	8
CEQ	Council on Environmental Quality.....	9
CPR	Common Pool Resource.....	18
CWA	Clean Water Act.....	8
EC	Executive Committee.....	6
ENGO	Environmental Non-Governmental Organization.....	2
EPA	Environmental Protection Agency.....	9
ESA	Endangered Species Act.....	7
FWS	United States Fish and Wildlife Service.....	7
ISC	New Mexico Interstate Stream Commission.....	17
kaf	thousand acre-feet.....	13
MRG	Middle Rio Grande.....	4
MRGCD	Middle Rio Grande Conservancy District.....	5
MRGESCP	Middle Rio Grande Endangered Species Collaborative Program.....	1
NEPA	National Environmental Policy Act.....	9
NMFS	National Marine Fisheries Service.....	7
P&P	Prior and Paramount.....	15
RIP	Recovery Implementation Program.....	6
RPA	Reasonable and Prudent Alternative.....	8
SES	Social-ecological System.....	20
SJCP	San Juan-Chama Project.....	12