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Judicial Behavior and Litigant Success in Environmental Cases at the United States Court of Appeals

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JUDICIAL BEHAVIOR AND LITIGANT SUCCESS IN ENVIRONMENTAL CASES AT THE UNITED STATES COURT OF APPEALS

by

Elizabeth Wheat

A dissertation submitted to the Graduate College
in partial fulfillment of the requirements
for the degree of Doctor of Philosophy
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This dissertation tests the legal model of judicial behavior and uses party capability, or litigant resource, theory to explain litigant success in the Court of Appeals for environmental cases and help understand the role litigant type and resources play. Environmental law has received little attention in judicial politics, and I examine which judicial behavior model explains case outcomes. The legal model argues case characteristics best explain judicial outcomes, whereas litigant resource theory posits judicial a litigant’s resources, or lack thereof, explain outcomes.

Galanter’s (1974) party capability theory focuses on advantages repeat players, the “haves,” possess and how these advantages enable them to more often prevail over one-shot, “have not” litigants. This theory is tested using a typology of litigant types including individuals, businesses, state and local governments, and other groups, such as nonprofit organizations. Songer and Sheehan (1992) and Wheeler (1987) find that litigant resources have an effect on success before the Court of Appeals. This has not yet been analyzed exclusively with environmental cases, so I show how resources and statutory provisions matter in this arena.
I examine five of the most litigated environmental statutes: the Resource Conservation and Recovery Act, Clean Air Act, Clean Water Act, Federal Insecticide, Fungicide, and Rodenticide Act, and the Toxic Substances Control Act. Data for this analysis includes cases in Westlaw and Lexis Nexis from 1994–2008 in which these statutes were the primary ones under dispute.

Litigant resources theory most persuasively explained litigant success and support Galanter’s argument that repeat players and litigants with the most resources will be successful. The legal model is supported by evidence that specific provisions of the environmental statutes directly influence case outcomes and this varies by statute. There is still much research to be done in this understudied area at the intersection of judicial and environmental politics, but this dissertation improves the literature considerably by explaining what determines case outcomes in the Court of Appeals for these statutes and how the environmental statutes are interpreted by the court system.
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Last but not least, I want to thank my family. I am the first one to earn a doctorate and could not have done it without their love and support. My grandmothers
call this dissertation “The Book” and now tell everyone they know that there’s a
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Elizabeth Wheat
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CHAPTER 1

LITERATURE REVIEW: THE VALUE OF LITIGANT RESOURCES AT THE COURT OF APPEALS

Introduction

Beginning in the 1970s, the environmental movement swept across the United States, and in the process, Congress enacted a series of groundbreaking statutes focused on environmental protection. With the last major revision of these statutes in 1990 for the Clean Air Act, interpretations of these environmental policies are largely the domain of the judiciary and responsibility of judges who may or may not have substantive expertise. This invites the questions of which statutes and cases are litigated, how these statutes are interpreted, which types of parties win the cases, and what the legal interpretations mean for environmental policy at-large. In order to start addressing these questions, an examination of judicial behavior is necessary.

We know judges at each level in the court hierarchy behave differently with both endogenous and exogenous factors including ideology, case issue, and circuit location influencing case outcomes and a litigant’s chance at prevailing. When specific issue areas are examined, the varying influence of these factors continues. For example, limited work has been done to understand how judges behave in environmental cases for particular statutes or a sample of circuits, but we do not know to what extent the most prevalent judicial models explain outcomes in this area on a larger scale. We also do not have a solid understanding of how the existing body of knowledge on judicial hierarchy, litigant resources, amicus briefs, interest groups and
demographic characteristics of the judges influence judicial behavior in environmental cases at the appellate level.

The main focus of this dissertation is to understand the relationship between judicial behavior and litigant resources at the Court of Appeals using five substantive environmental laws: the Resource Conservation and Recovery Act (RCRA), the Clean Air Act (CAA), the Clean Water Act (CWA), the Toxic Substances Control Act (TSCA), and the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). These laws were chosen because they are some of the longest established environmental statutes, cover most of the biggest environmental problems in the United States, and there was sufficient data at the Court of Appeals level for a quantitative analysis.

Perhaps notable absences from this research are the Endangered Species Act (ESA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and the National Environmental Protection Act (NEPA). The ESA was not chosen for two reasons; first, it is not primarily enforced by the Environmental Protection Agency as the other statutes are and secondly, there were not enough cases for a quantitative analysis meeting the coding decisions during the time period under study. CERCLA was not included because of the complicated liability regime it imposes and the challenge in classifying upperdogs/underdogs, which as described in Chapter 2, is a core component of this research. Finally, NEPA was not included because it is more of a procedural statute and puts forth standards used by all of the
actors and other statutes. These are all areas with potential for analysis and will be discussed under future research plans in Chapter 7.

In order to test the statutes chosen, I will examine on what grounds litigants prevail and the impacts of both endogenous and exogenous factors on environmental decisions at the appellate courts. How does the legal model explain judicial behavior in these pollution-centered statutes, which comprise a significant portion of environmental law? Applying this literature to litigant resources, what are the implications of judicial behavior for environmental law? Having a sufficient amount of resources to achieve success in the courts is a problem that constantly confronts environmental advocates and organizations, making it important to understand both how resources and judicial behavior can influence their success.

The unique contribution of this research to judicial literature is the application of theories to an issue area receiving little attention from court scholars and a contemporary application of Songer and Sheehan’s (1992) party capability theory to success at the Court of Appeals which they argue is an ideal level to study litigant resources within the federal hierarchy. Environmental law is not an area studied to the extent of other areas such as search and seizure cases, gender discrimination, or civil rights, and we do not know to what extent the judicial literature persuasively explains judicial decisions.

For the environmental literature, this research will help understand the context in which environmental litigation is pursued from the perspective of litigant resources and from the court’s standpoint on how these environmental cases are decided. I look
at who wins the cases and how they do so, which may enable future litigants to be more strategic in which cases they choose to pursue and which provisions will likely be most successful. This is particularly important for litigants with fewer resources who need to allocate them in the most efficient manner.

Bridging these two fields will provide a richer understanding of both judicial behavior and litigant resources using a large sample of environmental cases at the Court of Appeals. In order to understand each field’s contribution to this dissertation, I will first discuss the important theories and research.

**Literature Review: Theories of Judicial Behavior**

Judicial scholars have developed several models to explain judicial behavior including the legal, attitudinal, and strategic interaction models. The legal model claims that decisions of a court are substantially influenced by facts of the case in light of the plain meaning of the statutes, the Constitution, precedent, and the framers’ intent as determined by the judge(s). Segal and Spaeth (2002) criticize this model before presenting their alternative view of attitudinal decision-making. They argue that with the legal model it can be a challenge to determine “plain meaning.” The English language is not precise, legislatures often are unable to define critical terms, statutes may conflict, and identical words may have different meanings depending on the context. Additionally, they note a number of ways judges at all court levels can deviate from adhering to precedent, including distinguishing a case because the facts...
before them are substantially different, limiting/extending a precedent in principle, and the most clear rejection of overruling a precedent (p. 81).

After critiquing what they perceive as weaknesses of the legal model, Segal and Spaeth offer their own view of judicial decision-making, the attitudinal model. Rather than make decisions based on the pure law, they argue judges selectively choose cases that coincide with their legal preferences, giving the appearance they are adhering to the legal model when they are actually choosing cases to support their ideological preferences. Whether or not a judge is liberal or conservative is the driving force behind a judge’s decision at the Supreme Court, not the law.

Subsequent scholars such as Hansford and Spriggs (2006) have modified this finding of the attitudinal model, discovering that while ideology remains an important explanatory variable, there are other critical influences. As part of the law and the cornerstone of the legal model, precedents remain important in the attitudinal model, but in a different way. In a study of Supreme Court decisions from 1946–1999, Hansford and Spriggs (2006) find that precedents can be a constraint on decisions, but that they also present opportunities for judges to support their preferred outcomes. Hansford and Spriggs note that in the Supreme Court cases they examined, judges still took precedent into account, but as the ideological distance from the precedent grew, the probability of the precedent being treated positively declined. This finding was also tested at the circuit level. Here, Hansford and Spriggs found that appellate judges pay more attention to their court’s own precedents that were positively treated
by the Supreme Court and were more likely to both follow these cases and cite them in opinions.

To address perceived gaps left by the legal and attitudinal models, particularly at the opinion-writing stage, scholars such as Murphy (1964), Epstein and Knight (1998), Maltzman, Spriggs, and Wahlbeck (2000), and Hammond, Bonneau, and Sheehan (2006) advocate a model called strategic interaction or strategic behavior. In this model, a justice may not advance their ideological preferences to the extent he/she would prefer in favor of a supporting a more limited opinion. Epstein and Knight describe it as follows,

[J]ustices may be primarily seekers of legal policy, but they are not unconstrained actors who make decisions based solely on their own ideological attitudes. Rather, justices are strategic actors who realize their ability to achieve their goals depends on a consideration of the preferences of other actors, the choices they expect others to make, and the institutional context in which they act (1998, 10).

Focusing on Supreme Court opinions, Maltzman, Spriggs, and Wahlbeck (2000) argue judges make strategic calculations when assigning and drafting opinions. Forming a coalition of at least five justices to produce a majority opinion involves what the authors term the “collegial game” (Maltzman, Spriggs, and Wahlbeck 2000, 8). The collegial game has three phases: first draft of the majority opinion, responses to the initial draft from other justices in the majority, and finally circulation of other draft opinions in response to the feedback. The legal model would explain the outcome during this process as a result of the case facts and law, and the attitudinal model would explain the outcome in terms of a judge’s ideological preferences. The strategic model draws from both of these theories and looks at
judges as strategic actors with ideological preferences who have to operate within a system of institutional constraints. These constraints include both formal rules and informal norms that restrict choices available. In a collegial game based on interdependency, the strategic model looks at how judges craft opinions within these constraints while furthering their ideological preferences.

Applying strategic behavior to the Court of Appeals, Hettinger, Lindquist, and Martinek (2004, 2006) look at ideological disagreement among appellate judges and how institutional differences between the Supreme Court and appellate courts may influence horizontal dissensus within a circuit or vertical dissensus between the circuit and higher court. Hettinger, Lindquist, and Martinek (2006) view the attitudinal model as a starting point and then introduce additional characteristics of judges, cases, and the circuits to explain behavior at the U.S. Court of Appeals. Factors such as position on the court (chief justice, freshman, district judge sitting by designation), circuit norms (dissensus, workload), and case characteristics (salience, complexity, quality of legal argument) are applied to a justice’s decision on whether they should write a separate opinion. Hettinger, Lindquist, and Martinek (2006) ultimately conclude that the attitudinal model alone cannot explain decision-making at the circuit level but that it remains a useful model to start from.

While Hettinger, Lindquist, and Martinek (2006) do not find support for strategic behavior in models testing behavior between the Circuit and Supreme Court, the model testing reversal of District Court decisions finds that factors such as circuit and case characteristics, or whether the Chief Justice authored the opinion, do play a
role in whether these decisions are reversed. Overall, the research affirms the importance of ideology in dissensus, but invites questions on how strategic theory explains dissensus within a circuit or among the levels of the court system.

These scholars have demonstrated that there are a number of ways to look at strategic behavior including ideological distance from other branches of government, or within the same branch, or in a hierarchical sense between a panel and circuit or the Supreme Court. This dissertation focuses on rulings at the appellate level in the majority opinion and does not examine dissents or reversals. To test the potential influence of ideological distance as a strategic factor in the majority opinion, though, a variable is included to test whether ideological distance between the panel and circuit is significant. The theoretical focus remains on litigant resources and the legal model, however.

Both the legal and attitudinal models, with a clearer focus on judicial decisions than strategic behavior, have also been applied to the lower courts and we have learned more about how they pertain and their limitations. The lower courts are different in several important ways including a mandatory docket and the possibility of being overruled by higher courts. At the Court of Appeals, the influence of ideology and partisanship remain, and much of the attitudinal model can be applied. For instance, Songer and Davis (1990) conduct a longitudinal evaluation of First Amendment, civil rights, and criminal appeal areas and find that Democrat-appointed judges more often issue liberal decisions than judges appointed by Republicans.
Focusing on obscenity cases, Songer and Haire (1992) also discover that partisanship is influential in predicting how a judge will rule.

While the attitudinal model is useful at the circuit level, there are other factors that also become important in explaining judicial behavior including circuit location and panel effects. Focusing on environmental cases, Wenner and Dutter (1988) find that some circuits are more favorable to environmental demands, and litigant types such as the government are more successful than others depending on the circuit. Revesz (1997) examines the effects of panel composition and how a judge’s individual ideology can influence the case outcome for the D.C. Circuit. Using environmental cases, Revesz (1997) finds that ideology of other judges on an appellate panel are a better predictor of a vote than a judge’s own ideology, supporting the claim that the ideological identity on a panel matters for judicial behavior.

An additional important aspect of judicial behavior is compliance by lower courts and the extent to which courts choose to comply and the extent to which they are monitored. Songer, Segal, and Cameron (1994) use the principal-agent model to study compliance by the Court of Appeals with Supreme Court search and seizure cases. They find that the circuits are responsive to the court in this issue area, but that they also find opportunities to shirk in situations where there is not a clear fact pattern or precedent. Songer, Segal, and Cameron (1994) also find that litigants can play an active role in monitoring by the Supreme Court, but that when the circuits appear to have been faithful agents, litigants are less likely to play this “fire alarm” role.
Monitoring in this case was measured by whether litigants were more likely to appeal cases that relied on the preferences of lower court judges rather than those that relied on the Supreme Court’s preferences.

Haire, Lindquist, and Songer (2003) take a similar approach to studying court hierarchy and compliance, but instead look at civil rights decisions of circuit and trial courts. They find that the Supreme Court influences the circuit courts and that the district courts take both Supreme Court and Court of Appeals precedents into account when issuing opinions. Interestingly, they also show that the appellate court tries to advance its own preferences whenever possible and reverses cases to advance these preferences and those of the Supreme Court. This research is a good example of the attitudinal model’s claim regarding the supremacy of ideology, but also illustrates other constraints faced by a court within the judicial hierarchy. Attitudes remain an important influence, but as one moves down the court hierarchy, institutional factors such as the fear of reversal also become more meaningful.

It is also important to understand how demographic factors such as gender and race may influence judicial decision-making. Songer, Davis, and Haire (1994) find that women are more likely to vote liberally when deciding employment discrimination cases, but not when ruling on obscenity or search and seizure cases. Boyd, Epstein, and Walker (2010) looked at whether male and female judges decided cases differently and if the presence of a woman on a panel influenced the final opinion. In a study of thirteen areas of law, they find gender effects only in cases
dealing with sex discrimination. Their research suggests female judges decide cases differently depending on the issue area.

Lastly, it is necessary to look at publication of cases and the implications for researchers. The Judicial Conference encouraged appellate courts to establish criteria for publishing opinions with precedential value in the 1970s and said “[O]pinions should be restricted to appellate decisions of precedential import, and have ‘[a] uniform set of procedures and mechanisms for access to court of appeals opinions, guidelines for publication or distribution, and clear standards for citation’” (Hooper, Miletich, and Levy 2011). In response to the volume of opinions, circuits adopted their own rules for publication. For example, the Fourth Circuit will only publish cases that were briefed and had oral arguments while the Ninth publishes all opinions except memoranda or orders unless the court orders their publication (Hooper, Miletich, and Levy 2011, 31). In circuits such as the First, Fifth, Sixth, and Ninth, publication is ordered if there is a concurring or dissenting opinion to the case. Due to the variation in circuit rules, publication rates can range from 7% to 40.2% (Hooper, Miletich, and Levy 2011, 30).

The importance of case publication is that only published cases serve as precedent in the circuit they are decided (Malmsheimer, Keele, Floyd 2004). With the Court of Appeals as the effective court of last resort, this means the published opinions establish the rule of law that applies to subsequent cases. Due to only approximately five to ten-percent of all cases being published and difficulties in obtaining unpublished opinions, scholars initially focused more on published
decisions for research (Ringquist and Emmert 1999). Carp and Rowland (1983) argued published cases were representative of all case and that because they were the most important decisions, excluding unpublished opinions would not significantly affect the results. Subsequent scholars disagreed and began exploring whether there were meaningful differences between published and unpublished opinions.

Ringquist and Emmert (1999) test an integrated model to determine if there are differences in penalty severity between published and unpublished district court cases for the CAA, CWA, and RCRA from 1974–1991. They find penalties in published cases are much higher than those for unpublished cases and argue that sole reliance on published opinions would have suggested significantly different conclusions.

Using both district and appellate cases of Forest Service litigation, Keele et al. (2009) analyze differences in ideological effects in published and unpublished opinions. At the appellate level, judges were less likely to follow their ideological preferences in unpublished cases, whereas at the district court level, there was no difference between published and unpublished opinions and judges did not follow their ideological preferences in either type. Their findings not only demonstrate differences between case publications, but also differences within the federal judicial hierarchy.

Songer et al. (1989) use the upperdog/underdog typology to this publication debate and find that opinions in which upperdogs such as the government won had a statistically significant higher publication rate. Similarly, Swenson (2004) observed
that district court judges were also more likely to publish opinions in which the upperdogs won. Publication rates also varied across circuits when upperdogs were the petitioners (Songer and Sheehan 1992). These findings suggest that both publication type and the upperdog/underdog are important to understand judicial behavior and case outcomes.

This research on opinion publication, demographics, and judicial behavior at multiple levels of the court illustrates the dominance of a few theories, but also the fact that we do not know the extent to which they apply to different time periods and specifically to environmental cases. With most environmental cases not reaching the Supreme Court and staying at the circuit level, published and unpublished cases at the Court of Appeals will be the focus of this work.

Role of Litigant Resources

No matter which level of court under study, resources available to litigants are critical and can be a deciding factor in a case. Galanter (1974) argued that litigants with greater resources, status, and experience have more advantages in court as repeat players over one-shot litigants. He constructed a matrix of one-shot litigants and repeat players as a way of explaining different match-ups in the courtroom and showing how the system advantages repeat players such as the government. Galanter (1974) notes several ways one-shotters can gain the advantages provided to the system by repeat players and emphasizes that while these players are successful more often than not, the “haves” do not always prevail in litigation (Kritzer and Silbey
Wheeler, Cartwright, Kagan, and Friedman (1987) studied litigant resources and, in contrast to Galanter, argued that the “haves” do not have an advantage in cases at the State Supreme Court level.

Songer and Sheehan (1992) tested these inconsistent results on cases at the Court of Appeals using published and unpublished opinions and studied the effect of litigant resources at the circuit level. Cases from the Fourth, Seventh, and Eleventh Circuit in 1986 were included, a total of 4,281 cases. Each litigant type was put in one of the following categories: individuals, businesses, state and local governments, or other which include nonprofit organizations, private/nonprofit schools, organizations, political parties, or otherwise unclassifiable litigants. The authors then did a second analysis focusing on specific business types and created a category of “underdogs” of poor and racial minorities. Underdogs were the least successful litigants in this second analysis on specific business types. Litigant resources made the most difference and upperdogs won more than other litigant types, even after controlling for ideology, region, and case characteristics (Songer and Sheehan 1992). Farole (1999) also used the classifications put forth by Wheeler et al. (1987) and used by Songer and Sheehan (1992) to compare litigant resources and confirmed that stronger litigants, those with greater resources, were again more successful than litigants with fewer resources. It is this typology and finding that I test with environmental cases at the Court of Appeals.
Administrative Procedures and *Chevron* Deference

In addition to the greater resources upperdogs have, there are advantages and challenges inherent in administrative law and precedents, specifically the Administrative Procedure Act (APA) of 1946 and the Supreme Court ruling in *Chevron U.S.A. vs. Natural Resources Defense Council* (1984) that favor upperdog litigants, particularly the federal government, and make it more likely for them to prevail in a case against other litigant types because it calls for judicial deference to agency decisions. The APA forms the foundation of administrative law, defining “agency,” agency functions, types of agency action, procedures for adjudication and rulemaking, and setting standards for judicial review (Funk, Shapiro, and Weaver 2001). *Chevron* further clarifies when and how deference to decisions of the federal agencies is required under the APA, further stacking the deck against underdog litigants. Being aware of both the APA and *Chevron* decision is important to understanding the environment in which litigants with fewer resources must operate.

The APA provides a critical foundation for administrative law in the United States and sets the stage for how agencies operate and their responsibilities. Passed in 1946 after years of lobbying and reports by the Special Committee on Administrative Law of the American Bar Association (ABA), the APA was passed. The statute’s purpose was to establish a uniform code across all federal agencies. It contains six major sections all with relevance to environmental law: “definitions of terms used in the act; the rules for fair information practices; guidelines for rulemaking; procedures
for adjudication; creation of administrative law judges; and provisions for judicial review of agency action” (Buck 2006).

Several sections are of particular relevance. Section 551, known as the definitions section, defines “agency” with particular exceptions such as the President not being considered an agency and a government corporation not automatically defined as an agency (Funk et al. 2001). Under the APA, agencies are responsible for implementing laws of the U.S. and categorized as regulatory agencies, those that administer social entitlement programs, and other agencies such as the Department of State or Forest Service that do not fall into either of the previous categories (p. 17). For the cases in this dissertation, the EPA is the agency appearing most often.

The judicial review section of the APA, §701, clarifies procedures for review of agency actions including when they are exempt. By covering agency actions, the APA is the standard the courts use (Keele et al. 2006). An action is exempt from review if the “statutes preclude judicial review” or the action has been “committed to agency discretion by law” (Buck 2006). A related section §706(2)(A) prohibits “arbitrary and capricious action and abuses of discretion” and specifies when these actions are subject to review. It is therefore the responsibility of the court to determine if an action falls under the agency’s discretion or if it was an abuse of such discretion. A judge may “compel agency action unlawfully withheld or unreasonably delayed” and “hold unlawful and set aside agency action, findings, and conclusions” deemed “arbitrary, capricious, abuses of discretion, violation of constitutional rights,
exceed statutory authority, violate due process, or are unsupported by substantial evidence” (Buck 2006, 116; Pierce et al. 1992).

In the 1970s, a series of environmental statutes were passed and opportunities for the courts and interested parties to become involved in both procedural aspects and substantive acts of agencies were expanded (Shapiro 1995). By the 1980s, a majority of the significant decisions of federal regulatory agencies were the subject of litigation (Tate and Vallinder 1995). Provisions included in the APA for judicial review under §701 and §704 that ranged from no deference to almost complete deference to agency action were broadened by laws such as the National Environmental Policy Act (NEPA) and by provisions in the Endangered Species Act (ESA). NEPA added the requirement for all federal agencies to include the public in both the planning and analysis before the agency made a decision while the ESA allowed for more public access to remedies through the courts (Anderson 1973, Alden and Ellefson 1997).

In addition to the APA, *Chevron U.S.A. v. Natural Resources Defense Council* (1984) has had a major impact on administrative law and exempted some instances of discretionary action from judicial review (Buck 2006). *Chevron* is one of the most significant Supreme Court decisions effecting how the courts evaluate rules promulgated by federal agencies (467 U.S. 837 [1984]). It is the central opinion on deference to the EPA and how the courts interpret EPA discretionary acts, though its value as precedent is not limited to the agency or even environmental law (Ferrey 2010). The case involved defining a “major stationary source” to improve the
efficiency of control measures listed in the Clean Air Act (CAA) 1977 Amendments. The statute did not define this source type referred to in §172(b), and the EPA chose to define it with a “bubble concept” that treated all polluting activities belonging to one industry group and located on neighboring properties as one source. By treating an entire plant as a “stationary source,” an existing plant only had to install/modify one piece of equipment rather than make plant-wide modifications to meet terms of their initial permit as long as the modification did not increase their overall emissions (Galalis 2004, 80). Environmentalists disagreed with the EPA’s rule and “bubble concept” and the D.C. Circuit Court agreed, finding the EPA’s statutory interpretation inconsistent with congressional intent (Cross and Tiller 1998). The Supreme Court sided with the EPA, however, and in the 6-0 opinion, the Court ruled judges must defer to agencies and put forth a two-step process for interpreting agency rules (Hurwitz 2006).

The first step in the process is for the court to ask whether Congress has directly addressed the question at hand. In cases where Congress clearly expressed its view on the issue, the court and agency must defer rather than give a new interpretation. If the court finds that “Congress has not directly addressed the precise question at issue” and the statute is “silent or ambiguous with respect to the specific issue,” then the court moves to the second step in the process (Galalis 2004).

The second step of the *Chevron* process is to determine whether the agency regulation in the dispute is a “permissible construction” of the statute. If the agency’s interpretation is a “permissible construction” then the court must defer to the agency’s
rule. This does not mean the court has to agree with the construction or feel that it was the best possible interpretation of ambiguity on the statute, only that the interpretation was reasonable. If a regulation passes the first part of the *Chevron* test, it is highly probable the agency will win at this step as well. As of 2004, the Supreme Court had not invalidated any agency rule failing step two (Galalis 2004). Several circuit courts have overturned agency rules at this step, however, making a closer analysis of the circuit level interesting in exploring the force of *Chevron* and to what extent this court level defers to the Supreme Court.

*Chevron* is one of the most cited cases in contemporary law, making its impact on judging important to examine (Ferrey 2010). If the court characterizes an issue in the dispute as a question of law, courts will rule on the issue independently and not defer to the decision of the agency (p. 63). For interpretive rules, this is particularly the case because these rules do not receive the same level of deference as a formal rule (Ferrey 2010, 64). Despite the *Chevron* ruling specifically calling for judges to “reconcile competing political interests [but] not on the basis of the judges’ personal policy preferences,” ideology can also influence how *Chevron* factors in to a judge’s decision with a court deferring to an agency action if they agree with the agency’s policies (*Chevron U.S.A. v. NRDC* 1984, Cross and Tiller 1998, Caruson and Bitzer 2004, Sheehan 1990).

A number of scholars debate the extent to which courts actually defer to agency decisions and whether the Supreme Court’s precedents since *Chevron* provide clear guidance on how much lower courts must defer to agency rules (Cohen and...
Spitzer 1994, Elliott 2005, Galalis 2004, Gossett 1997, and Hurwitz 2006). Deference is justified by one of three reasons: expertise of agency officials, increased political accountability, and congressional intent. The first two were stated specifically in the *Chevron* decision while the third was implied (Gossett 1997). Advocates of the *Chevron* decision argue it was a positive administrative law change because decisions are now vested in substantive policy experts in the agency rather than relying on lawyers in the Office of General Counsel (OGC) or congressional staffers. Some, such as Elliott (2005), go as far to say *Chevron* has improved the administrative state’s democratic legitimacy. Critics argue this deference shifts the balance of power to an agency that is part of the executive branch and likely heavily influenced by the political priorities of the president, rather than to objective policy experts within the agencies.

The significance of *Chevron* for litigant success today is the advantage it gives to federal agencies. Agency decisions are the status quo or controlling precedent. Any party challenging a decision made by the EPA has to overcome this *Chevron* deference, which is very difficult for any litigant type to do, especially underdogs with limited resources. A litigant must also show why an agency action is subject to judicial review, which may be as difficult. The combined effect of both the APA and the *Chevron* decision is to put forth administrative processes consistent across all agencies in the federal government. This dissertation focuses on the *Chevron* decision specifically, but it must be understood within the context of the APA.
Role of Amicus Briefs

A number of articles have brought together research on amicus briefs and the upperdog/underdog or “haves” and “have-nots” literature. This body of work examines whether briefs submitted advantage particular litigant types, if they level the playing field, or if they have no influence. Results for litigant success change slightly when amicus briefs are added in to the upperdog/underdog work. Barker (1967) notes that “the activity of third parties in sponsoring litigation has made the judicial forum much more accessible to individuals who raise issues of broad-scale significance” (43). For environmental actors pursuing broad-scale issues such as air and water pollution, this is particularly the case. Songer et al. (2000) find that the briefs level the playing field, and upperdogs have little advantage when the underdog is supported by an amicus brief. At the Supreme Court level, briefs are influential in shaping both the Court’s policy outputs and are not simply submitted in cases where the submitting party believes the case is more likely to go in their favor (Collins 2007). A particularly interesting finding in Collins (2007) is the threshold effect of briefs where after a large number of briefs in favor of a particular position, there are diminishing returns. It remains to be seen if this finding applies at other courts or with specific issue areas.

Amicus briefs are an additional way for actors to participate in the legal process and possibly influence the final opinion. The briefs can be an additional resource for any litigant. McGuire (1990) and Wolpert (1991) focus on specific issue areas (obscenity and gender discrimination) and find that there was a positive
correlation and greater probability of winning based on the number of amicus briefs filed in support of the litigant. Songer and Sheehan (1993) tested this finding on a larger number of issues areas and looked at litigants with at least one amicus brief in support at the Supreme Court, compared to those who do not receive support. They found the briefs had little impact overall. Litigants with at least one brief in their favor were one percent more likely to win, appellants who were supported by briefs were slightly more likely to lose, and respondents with amicus briefs were more likely to win (Songer and Sheehan 1993). At the state supreme court level, Songer and Kuersten (1995) find a positive and strong relationship between litigant success and amicus support. Litigants with one or more briefs were more likely to win than those with no support in published decisions from state supreme courts in Georgia, South Carolina, and North Carolina.

In the judicial literature, little work has been done in the specific area of environmental litigation to determine whether amicus briefs influence litigant success. With the technical nature of environmental legislation, there are significant demands placed on the legal system, requiring judges to make decisions on complex scientific regulations. For example, provisions of the Resource Conservation and Recovery Act for distinguishing whether a solid waste is hazardous can be scientifically complex to interpret and apply and amicus briefs could arguably play a critical role in explaining the broad-scale significance of this statutory language and in translating the technical issues into more understandable points of law. Hassler and O’Conner (1986) look at environmental litigation and find that amicus briefs from
specific groups do play an important role, but were unable to say if this was due to the groups studied or the issue area.

**Environmental Statutes**

During the ‘Environmental Decade’ of the 1970s, Congress passed a series of environmental laws regulating, water, air, and hazardous or toxic substances and the courts became more involved in the implementation of the laws (Wenner 1982). These statutes set acceptable levels of pollutants, required technologies, and attempted to regulate a substance from its creation and release through its disposal and clean-up.

In her early examination of the court’s role in environmental policy, Wenner (1982) coded 1,900 cases at the district and circuit court level from 1970–1979 to understand the judicial system’s growing role in implementing policy. The six types of laws included were as follows: pollution controls laws (including the CAA, CWA, TSCA, and FIFRA), wildlife laws, public trust laws, public works laws, state laws, and miscellaneous. The largest number of cases, 728, dealt with pollution control issues. The four most frequent types of match-ups were interest groups challenging the government, businesses challenging the EPA, the government challenging the industry, and intergovernmental disputes (Wenner 1982, 39).

Most relevant to the statutes coded for this dissertation are Wenner’s findings on the CAA and CWA. For air pollution cases, the federal government was usually the defendant and businesses were the most frequent petitioner, often claiming the
new National Ambient Air Quality Standards (NAAQS) were too strict. The CAA has a unique feature requiring anyone challenging the NAAQS or motor vehicle emissions to start the case in the D.C. circuit which Wenner’s research finds to be more favorable to environmentalists (p. 110). The EPA also has exclusive jurisdiction with regards to air quality cases. For these cases, the federal government was usually successful.

For the CWA, there were twice as many cases from 1970–1979 compared to air pollution litigation. The government was again the most frequent defendant, but in this area of law, environmentalists petitioned more cases than businesses and were much more successful pursuing citizen suits. Additionally, the CWA requires no exclusive jurisdiction to the D.C. Circuit and primary responsibility for enforcement resides with the Army Corps of Engineers and the Coast Guard, rather than the EPA. Both the federal government and industry, “upperdogs” under the Songer typology, were very successful in water pollution cases (Wenner 1982).

An interesting finding from Wenner’s work is differences among circuits and among statues, providing support for the strategy of litigants engaging in forum shopping. Looking first at circuit differences, D.C. issued the most pro-environmental decisions and along with the First and Seventh Circuits, was more supportive to environmental groups and less favorable to industries. In contrast, the Fourth and Tenth Circuits ranked low in environmental values and ruled more often in favor of business demands. Businesses avoided the circuits environmental groups often prevailed in, supporting the claim of forum shopping and seeking the most favorable
location to one’s position. In research on forest litigation, Malmsheimer et al. (2004) found litigant success for the Forest Service varied by circuit with the Seventh and Eighth being the most favorable to the agency compared to low success in the Ninth Circuit, likely reflecting the greater frequency of environmental groups petitioning case in this circuit. Jones and Taylor (1995) compare litigant success by statute and find the government wins most often in National Environmental Policy Act (NEPA) cases and, along with Native American tribes, is one of the most successful litigants under the National Forest Management Act (NFMA). Varying success rates for litigants by circuits and by litigant type will be tested in subsequent chapters.

For this dissertation, I focus on five substantive and heavily litigated environmental laws addressing water, air, and hazardous or toxic substances. This is a more narrow focus than Wenner (1982), but makes the important contribution of adding the Resource Conservation and Recovery Act and examining whether trends from the environmental decade still hold over thirty years later. RCRA looks primarily at how hazardous wastes are used, handled, and discharged. The Clean Air Act (CAA) and Clean Water Act (CWA) address problems of air pollution and water contamination. Lastly, the Toxic Substances Control Act (TSCA) and Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) regulate the manufacture and distribution of toxic substances. By selecting these statutes, two of the most salient pollution control issues of clean air and clean water are addressed in addition to covering the ‘cradle-to-grave’ process for hazardous and toxic substances.
Legislative Background for RCRA

RCRA was enacted in 1976 as an effort to provide a cradle-to-grave monitoring system for hazardous waste. It regulates the creation, transportation, storage, treatment, and disposal of hazardous waste substances at a final waste site (Ferrey 2007). Congress amended the statute in 1984 to try and phase out disposal of toxic chemicals and force development of better technology to reduce the toxicity of hazardous wastes. While RCRA technically covers both nonhazardous solid wastes and hazardous wastes, states have more responsibility to address and regulate nonhazardous solid wastes.

Enforcement for RCRA provisions includes regulation by the EPA and other government entities and citizen suit provisions. The EPA is responsible for establishing permit conditions, determining when the conditions are violated and the public welfare is endangered, and can demand information and access to the business or contaminated site when needed. A weakness of this enforcement is its dependence on voluntary self-monitoring by the industries and on the tracking system for waste generators and transporters. This reliance on industry action invites litigation for failing to report the required tracking information.

Citizen suits, under §7002 of RCRA allow any individual to pursue a civil action against another person or against the EPA for failure to perform “a non-discretionary act.” Citizens cannot sue the EPA if the agency chooses to not pursue action against an alleged RCRA violator and there are a number of barriers to pursuing citizen suits. One of the largest barriers is that citizen suits are preempted by
state litigation or litigation filed by the EPA. In order to file a suit, citizen plaintiffs must provide 60 days’ notice of intent to litigate or 90 days’ notice for imminent hazard actions, they may not try to stop the siting of a new facility or issuance of a permit, they may not pursue a suit if the EPA is prosecuting the action or a CERCLA clean-up, they may not pursue enforcement action if it overlaps with state efforts, and any suit must allege “continuous or intermittent violations” and cannot be based completely on past RCRA violations. In addition to challenges of fewer resources, these limitations make it difficult for citizen suits to be successfully pursued in the courts and put the burden on other litigant types to challenge the federal government and statute (Ferrey 2010). Ultimately, citizen suits are one way for underdog litigants to pursue enforcement of environmental laws, but not without significant challenges.

Legislative Background for the CAA
The Clean Air Act (CAA) was originally adopted in 1963, with significant amendments in 1970, 1977, and 1990. The statute marked a significant expansion of the federal government’s role and authorized the Department of Health, Education, and Welfare to formulate air quality standards through discussions with polluters and government representatives (Ferrey 2010). In 1970, legislation was passed amending the CAA and creating a cooperative relationship between the federal government and states. National ambient air quality standards (NAAQS) for ambient air were established, along with minimum technology-based standards for emissions. The states’ responsibility was to enforce these standards through State Implementation
Plans (SIPs) (Ferrey 2010). The CAA amendments, along with other environmental statutes such as the National Environmental Policy Act, Clean Water Act, and the Endangered Species Act were all part of President Nixon’s expansion of the federal government’s regulatory role and oversight during the 1970s (Percival 2001).

Since the 1990 amendments, a large portion of cases arise from one of the CAA’s regulatory provisions, specifically § 108/109 (NAAQS), § 111 (New Source Performance Standards), or § 112 (emissions standards). The CAA contains enforcement provisions for the EPA, which include civil actions, administrative actions, and field citations. Additionally, the CAA has a provision allowing citizen suits to be filed by individuals or private interest groups against the EPA or a private party for civil penalties. Before a suit is filed, a 60-day notification must be given to the EPA, which allows a grace period for compliance. In the event the EPA chooses to pursue the case, the citizen suit becomes moot. One of the critical portions of this statute is that it allows for attorney fees to be awarded if the citizen or group is successful (Ferrey 2010). With individuals and nonprofit groups (“underdogs”) who operate with more limited budgets, awarding attorney fees can be a critical factor enabling them to bring suits challenging a business or federal agency “upperdog.”

A second provision with implications for individuals are the criminal penalties for any violations “knowingly” committed by the accused which include forging records, refusing to pay permit fees, failure to install mandated equipment to monitor emissions, not following procedures set forth in SIPs, or the most serious violation where a “source knowingly releases hazardous emissions creating ‘imminent danger...
of death or serious bodily injury.’’ If convicted of these actions, a corporation or individual acting on behalf of a corporation could face a large fine and jail (Ferrey 2010). The CAA also includes provisions and protections for whistleblower complaints. A number of the cases from 2001–2007 at the appellate courts include whistleblower complaints and decisions made by Administrative Review Boards (ARBs) who originally heard the dispute.

The CAA includes citizen provisions, but the procedural requirements established make it very difficult for individuals to pursue claims under this statute. Individuals must not only understand the science behind the act, they must also have the resources to prove how the federal or state actor erred and this can require extensive research and testing. Nonprofits or businesses also wishing to challenge a federal agency must overcome this research and resource hurdle, making any party opposing an agency the underdog. Although it is difficult for underdogs to pursue litigation in this area, they still chose to do so and in some cases succeed.

Legislative Background for the CWA

The federal Clean Water Act (CWA) we know today has its origin in the Rivers and Harbors Act of 1899, referred to as the Refuse Act. Originally intended to protect U.S. waters from interference with navigation, it is the oldest environmental statute and the first to regulate discharges into waterways (Ferrey 2010). The CWA’s goals differed from those of previous statutes, focusing instead on restoring waterways to the fishable and swimmable quality of 1983 and eliminating pollutant discharges by
1985. A series of amendments later extended these target dates and further defined the Act’s standards for what constituted a “discharge,” “navigable waters,” and “waters of the United States” (Ferrey 2010). The importance of this change is the additional discretion afforded to the EPA in establishing and interpreting standards. This mandated deference, in addition to *Chevron*, makes it difficult for any litigant to successfully challenge an EPA rule or interpretation.

Enforcement provisions for the CWA are similar to the CAA and §505 of the CWA permits citizen suits. States are also allowed to challenge an EPA administrator if the state feels the agency has failed to enforce an existing rule, if the agency has failed to take action, or if the state feels its interests have been harmed. Finally, CWA §507 contains a “whistleblower” provision allowing individuals to challenge a federal agency or business and attempting to protect them from retaliation. This provides underdogs with another legal avenue to pursue environmental protection while also protecting them from retaliation by the upperdogs.

**Legislative Background for the TSCA and FIFRA**

In the last fifty years, more than 10,000 chemical substances have been put in use and many are still consumed commercially. The two statutes that regulate the manufacture and distribution of these statutes are the Toxic Substance Control Act (TSCA) and the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). Unlike other environmental statutes, these regulate toxic products both at the production and market stage. The two statutes complement each other well, as FIFRA regulates
pesticides excluded by TSCA. Combined, these laws encompass chemical substances produced, distributed, and consumed in the United States.

In 1976, TSCA was enacted to “prevent unreasonable risks of injury to health or the environment associated with the manufacture, processing, distribution in commerce, use or disposal of chemical substances” (Ferrey 2010). Imported chemicals to the United States are also covered. TSCA’s structure involves an inventory of all chemical substances commercially used and manufacturers are required to submit a notice a minimum of 90 days before a new substance is manufactured or imported or an existing substance is used for a “significant new use.” The statute was the first to regulate all of the stages of a chemical substance for the purpose of protecting public health (Ferrey 2010, 602). Today it is considered a balancing statute requiring the EPA to establish a “‘reasonable basis’ . . . that the manufacture, processing, distributing, use, or disposal of a specific chemical substance presents an ‘unreasonable risk of injury to health or the environment’” (p. 604). A substance is only allowed into public commerce if its benefits outweigh the environmental costs (p. 606).

FIFRA is similar to TSCA in that it regulates toxic substances, but it exclusively covers pesticides and herbicides. A pesticide is defined as “any substance of mixture of substances that is (1) intended for preventing, destroying, repelling, or mitigating any pest, or (2) intended for use as a plant regulator, defoliant, or desiccant” (Ferrey 2010). It is important to note that the statute’s focus is on the intended use of a substance and not its level of toxicity.
This statute was enacted in 1947 with no purposeful concern for environmental protection or secondary impacts from the use of pesticides. FIFRA’s main goals were to make sure a pesticide performed its function of killing the target pest and that consumers using the products were sufficiently protected by instructions on the pesticide label. It focused on the users of the pesticides, farmers, and not potential effects of people living in areas near where pesticides were used. Following the public awareness created by Rachel Carson’s *Silent Spring* in 1962, creation of the EPA in 1970, and amendments including the Federal Environmental Pesticide Act of 1972, provisions in FIFRA were strengthened to now make the statute one that protects both human health and the environment (Ferrey 2010).

Each of these five environmental statutes addresses a critical aspect of environmental policy in the United States. While it is not an exhaustive list of environmental statutes passed by Congress, it is sufficient to provide extensive data and enable new analysis of judicial behavior and litigant resources in this issue area. The literature summarized here provides the foundation with which to apply predominant models in judicial politics to a specific issue area previously understudied. My dissertation uses an original dataset to provide an understanding of judicial opinions for litigants pursuing environmental cases. This research will add substantially to the body of work on judicial behavior as well as environmental policy and provide an unprecedented level of insight into these types of cases.

Chapter 2 will go into more depth on the legal model, importance of litigant resources and the specific variables used to test the hypotheses. Subsequent chapters
will describe meaningful differences for each statute with a concluding chapter evaluating when and how underdog litigants can succeed in environmental cases.
CHAPTER 2
THEORETICAL RELATIONSHIPS

Introduction
My theory is based on applying the legal models and litigant resource theory to the specific issue area of environmental law at the Court of Appeals. With a majority of environmental laws now written and implemented by agencies instead of Congress, the courts play a central role for litigants challenging agency decisions or statutory provisions purposely left vague by the legislature. Few environmental cases reach the U.S. Supreme Court, further increasing the importance of the Court of Appeals as the effective court of last resort. Previous scholars have used the Court of Appeals database to understand appellate cases, but I focus more specifically on environmental laws and resources of the litigants who pursued these cases, necessitating an original dataset collection.

For the statutes I have chosen to include in this dataset, the Environmental Protection Agency (EPA) is the agency primarily responsible for enforcement and thus appears in a large number of the cases (Ferrey 2010). This authority is delegated to the agency by specific provisions in the laws. Each statute has one or more provisions requiring the EPA to take a number of varied actions such as monitoring pollution levels, approving permits, or developing management plans. As part of this research, I will look at the success underdogs have challenging the EPA, but do not do a separate analysis into these different types of agency actions.
Another important agency consideration is the role of the *Chevron* decision instructing courts to defer to discretionary agency decisions and the procedures put forth by the Administrative Procedure Act (APA). The *Chevron* decision puts federal agencies at an advantage in the courtroom and may play a meaningful role in explaining upperdog success in environmental law. I expect it to put an underdog challenging a federal agency at a disadvantage because they will have to go above and beyond convincing the court to rule in their favor over an agency’s expertise.

Additionally, for a litigant challenging an agency decision or action, the APA sets requirements and procedural rules for federal agencies such as the EPA to follow, with Section 7 specifically recognizing federal court authority to “compel agency action unlawfully withheld or unreasonably delayed” (5 U.S.C. §706(1)). Litigants are not only able to challenge the statutes and decisions by the agencies, but also the process and timeline followed. This statute may not necessarily advantage underdog litigants, but it gives them the requisite standing with which to bring their case to court. The environmental laws in this dataset have comparable provisions enabling underdogs to challenge the process and timeline. In contrast to substantive provisions requiring competing science and substantial resources, sections addressing timeline requirements are less resource-intensive and I expect underdogs to be more likely to both cite these provisions and win more when they do.

When incorporated with litigant resource theory, the legal model provides a useful framework with which to test how litigants can prevail in environmental law and claims the facts of the case matter most in explaining outcomes. This finding has
been tested at the Court of Appeals using search and seizure cases and fact pattern analysis. For environmental cases, however, we do not know if these case provisions predict outcomes in a similar way. Part of my research examines whether specific legal provisions of the statutes level the legal playing field for litigants, if they advantage underdogs who are given standing by the statutes, or if in the situation such as the *Chevron* precedent, they disadvantage underdogs by instructing the court to defer to the upperdog federal agency. (See Appendix A for a detailed list of variables, measurement, and associated hypotheses for each model.) The characteristics will vary for each statute and Appendix B illustrates the provisions used in the final models.

Though not the primary theories used for this research, the attitudinal and strategic behavior models are important to note and a few variables to control for them are included in my final model. The attitudinal model argues judges decide cases based on their ideology and that whether a judge is liberal or conservative matters most in explaining judicial behavior. If ideology explains behavior, then the resources of litigants, or lack thereof, should not be important. Strategic behavior uses this ideological component and explains how judges choose to advance their preferences both at the panel and circuit level. Previous scholars used data from the Court of Appeals database and found the ideology of a judge can help explain case outcomes, however it is not yet known if this will hold true for environmental law cases.
Key Concepts

The first variable for the attitudinal model is panel ideology. Songer and Sheehan (1992), Sheehan, Mishler, and Songer (1992), and Revesz (1997) found panel ideology affects litigant success with some litigant types more likely to succeed than others depending on the panel’s composition. Environmental scholars such as Kovacic (1991), Revesz (1997), Klein (2002), and Keele et al. (2009) coded judges on an ideological scale in addition to coding outcomes of decisions seeking greater environmental protection as liberal. In this dissertation, only the liberal-conservative scale for judges is used and cases are coded for panel composition and not whether they seek more or less environmental protection.

The measure of ideology used is the median justice’s Judicial Common Space (JCS) score for each panel (Epstein et al. 2007, Poole and Rosenthal 1997). These scores were chosen for several reasons. Building on the initial work done by Giles, Hettinger and Peppers (2001), the scores are a more precise look at judicial ideology than simple partisanship identification. Giles, Hettinger, and Peppers (GHP) argued that in cases of senatorial courtesy with judicial appointments, the senator’s ideal point policy preferences, as calculated by Poole and Rosenthal’s Common Space scores, are a valid measure of a judge’s ideology. For instances when senatorial courtesy does not apply and the president appointed a judge, the president’s Common Space scores can be used. The JCS scores used in this dataset are built from the same Poole and Rosenthal Common Space and GHP scores to get the ideal point of Supreme Court justices and to get comparable measures for lower court judges. It is
important to note that JCS scores are not preferences of the judges themselves, but it is an accepted practice in judicial literature to use them as a better measure of judicial ideology than party of the appointing president.

An additional measure important for testing the role of ideology is ideology of the entire circuit.¹ Songer and Sheehan (1992) find liberal circuits to be positively related to underdog success. Since some circuits are more or less liberal than others based on the GHP scores, controlling for the influence of ideology at the circuit level is important. Circuit ideology is used to calculate an ideological distance variable between the circuit in which the opinion was issued and the deciding panel. This is a variable used in strategic behavior literature and its inclusion controls for effects the overall circuit may have on the deciding panel. The median justice JCS score of the panel is subtracted from the median JSC score for the circuit the year the case was decided.

The remaining control measures are for circuit location and litigant type. (See Appendix C for a map of the federal circuits.) Wenner and Dutter (1988) note some litigants at the district court level are more successful than others depending on the circuit and I test that finding at the Court of Appeals. With the exception of a federal agency’s increased likelihood of success in the D.C Circuit and the increased likelihood of environmental organizations’ success in the Ninth Circuit, I have no theoretical expectations for why other litigant types would be more or less likely to prevail in a given circuit.

¹ Special thanks to Denise Keele for providing data to measure ideology of the circuit courts.
Next, I use a typology for litigant types with upperdogs having the most resources at their disposals and individuals having the fewest. This is the key variable to test the explanatory power of litigant resource theory. *Litigant type* tests Galanter’s (1974) haves/have-nots theory and Songer and Sheehan’s (1992) upperdog/underdog typology (1–5) to determine if the type of the litigant explains judicial behavior. The litigant types are individuals (1), nonprofits (2), businesses (3), state/local governments (4), and the federal government (5). Individuals are always considered underdogs, based on the assumption they will have the fewest resources. The federal government is always an upperdog, based on the idea that the government has the most resources and an added advantage because of specific language of the statutes, APA, and the *Chevron* decision. For cases involving tribal governments, the tribe is coded as a federal government actor, recognizing its legal sovereignty. In cases with the same type of litigant, such as businesses, the party with the most financial resources is classified the upperdog because this was an easily measurable comparison. Upperdogs are considered ‘haves’ because they possess more resources than the opposing party in the case. Resources can include financial means, appearing frequently in court, or experienced legal counsel. I use Sheehan’s typology as a way to approximate the difference in resources each litigant type possesses.

One of the disadvantages of this typology is that it generalizes litigants within each type and may obscure meaningful differences because not all litigants within a category are truly equal. For example, a small community water association and a large national organization such as the Sierra Club would both be coded as a
nonprofit litigant despite differences in resources and litigation experience. Similarly, a Fortune 500 company and a local hardware store would be coded as businesses. This is a drawback to using the typology, but it remains a reasonable approximation used for litigant resources and is consistent with prior literature such as Songer, Sheehan and Haire (2003).

A second challenge with coding of litigant type is that I only code the first appellant and appellee. This was done for ease of data management and classifying the upperdog and underdog in each case, but it does not take into account other types of litigants whose participation could influence the court opinion. Future research will expand on this coding to include a more detailed measure of all litigants party to a case.

The theoretical focus of this dissertation continues with the legal model. The legal model argues precedent and case facts best explain judicial behavior. Beginning in 1970 with the National Environmental Policy Act (NEPA) and the Clean Air Act (CAA), a number of environmental statutes were passed by Congress and vested administrative and enforcement powers in the agencies (Ferrey 2010). This delegation of authority places an even greater emphasis on the courts to interpret both the initial statute and subsequent agency rules. For environmental cases, judges are specifically instructed by the *Chevron* precedent and the Administrative Procedure Act (APA) to defer to decisions made by the agencies, limiting their discretion even more for this issue area and most relevant to my focus on litigant resources, further advantaging upperdogs. Considering the unique importance of the *Chevron* precedent in
administrative and environmental law, citation to it in the majority opinion is included.

Additionally, the legal model emphasizes the role case facts play in explaining judicial behavior. With the exception of FIFRA, the statutes in this research have citizen suit provisions giving underdogs legal standing to bring these cases before the court. Each environmental statute has different substantive provisions specific to its environmental issue, though, and it is important to test how these may influence litigant success. Appendix B lists the provisions for each statute.

From prior work such as Wenner (1982) we know upperdog litigants such as the federal government often prevail in appellate cases and I plan to look at whether they are still as successful in environmental cases as they were in the decade after implementation of the environmental laws. In addition to the *Chevron* decision calling for deference to agencies of the federal government, the federal government has the most resources both in terms of experienced counsel and as a repeat player in the court. For cases where the Solicitor General is involved, the federal government also has the support of the presidential administration. The important question is less about why upperdogs prevail because everything suggests they should, but instead how any underdog is able to overcome all of the upperdog’s advantages. The legal model posits underdogs are able to do this through specific statutory provisions and case precedents such as *Chevron*.

Lastly, four dichotomous variables are included. The first two are *gender* and *race*, and whether there is a woman or minority judge on the panel. Boyd, Epstein,
and Walker (2010) found gender differences in sex discrimination cases with female judges voting more liberally. Wenner and Ostberg (1993) note that women and minorities are more likely to vote liberally across issue areas than their white-male Republican-appointed counterparts. In earlier works, Farhang and Warwro (2004) examined whether minority and female judges influence legal policy, finding that women do have a greater influence on panels they sit on when the legal issue is of particular relevance to them. Songer, Davis, and Haire also looked at gender effects at the Court of Appeals in particular case types, specifically obscenity, search and seizure, and employment discrimination to see if women are more liberal than men (1994). As discussed in Chapter 1, the liberal outcome in environmental cases is considered ruling in favor of the party seeking greater environmental protection, which is not how the cases were coded. At this stage of my research, gender is included to see if it plays a role in underdog success, but there are no expectations to whether race will help or hurt underdog litigants.

Third, Chapter One described the value and potential benefit of amicus briefs for underdog litigants up to a certain threshold. In environmental law cases, amicus briefs can help judges make sense of scientifically complex issues. They can also be an opportunity for underdog litigants to receive legal support from actors with more resources and expertise, so it is important to indicate whether amicus briefs were part of each case. Data limitations prevented content analysis of the amicus briefs, so I use a dichotomous variable for the presence of a brief in support of either the petitioner or respondent in the case.
Research Design and Data

The research design for applying these models to the area of environmental law involved a lengthy data collection process, as there is little in-depth data on these statutes during the given period of time. In order to determine whether the patterns predicted by the legal model or suggested by litigant resources exist in environmental cases, it is necessary to collect data on many cases; a simple case study might demonstrate that one model applies in a particular case, but would not reveal any consistent patterns. An analysis of many of these cases over time is much more appropriate. Since there were no preexisting datasets of environmental cases available to use, I collected all of the data used in this dissertation as part of the process.

I acquired the data by conducting a search in LexisNexis and Westlaw for cases decided between 1993–2008. The initial search was done using LexisNexis with a second search in Westlaw, a similar approach to that used by Songer (1988) and Swenson (2004) in their research on Court of Appeals decisions. Westlaw’s database neither includes the universe of unpublished cases nor a random sample, but using it in conjunction with Lexis Nexis, I accessed as many cases as publicly available (Hannon 2001). The databases differ in the secondary sources available due to licensing agreements, but there is little meaningful difference between the databases for available court opinions. I utilized both to ensure I had the universe of publicly available cases. The unit of analysis was each opinion, not the final outcome of
litigation, meaning that a party could have appealed multiple times and each one would be coded separately.

The time period was selected for several reasons. First, the period provided eight years of data each from both a Republican and Democrat presidency and 16 consecutive years of cases. Second, no major revisions took place to any of the five statutes chosen which improves the comparability of rulings. Third, the number of cases in these years provided a large enough sample to perform a quantitative analysis. Fourth and finally, ideology scores were available for most judges during this time period.

Searches in LexisNexis and Westlaw produced a large number of cases that did not meet the coding criteria. I read each case and excluded it if the opinion did not decide a statutory issue on the merits, if the petition is denied, remanded, or granted in part, or if the case only has a citation to the statute. For example, a case had to rule on a specific statute such as the Clean Air Act and not just reference the statute as part of a case precedent. A number of cases did have split verdicts in which the court would uphold part of the district court opinion and remand or deny other claims. I was unable to determine the upperdog or underdog “winner” in these situations, and therefore the cases were excluded (Songer, Sheehan, and Haire 2003; McCormick 1993).

The final original dataset includes 41 FIFRA cases, 24 TSCA, 100 CAA, 157 RCRA, and 266 CWA cases for a total of 588. For the Clean Air Act, I used Excel to draw a random sample of 100 from the population of 292 cases meeting the coding
criteria during this time period. This provided a representative sample and enough cases for a quantitative analysis.

The number of variables for each statute varied and the only limitation I considered prior to starting the coding process was using a slightly abbreviated list of statutory provisions as noted in Percival (2011). No dataset of this kind was previously available, necessitating a careful reading of each case, generation of spreadsheets for the data, and original quantitative analysis. For the combined FIFRA/TSCA chapter, I coded 133 variables for 65 observations. RCRA included 115 variables and 157 observations. The CAA had 549 variables for the random sample of 100 cases. The CWA was the largest statute coded with 230 variables and 266 observations. In summary, 1,027 variables were calculated and entered into Excel and STATA. Each chapter will go into more depth about the specific variables for each statute, including the frequency and significance.

**Methods and Hypotheses**

The data collected are analyzed quantitatively due to the number of cases and variables to be included in the models. With a dichotomous categorical dependent variable measuring whether or not the underdog won the case (0=underdog loss, 1=underdog win), I use a multivariate logistic regression model in STATA (Songer, Sheehan, Haire 1999). This MLE regression technique is used because the dependent variable can only have two predefined values (Halcoussis 2004). Logit produces a
model estimate that can be used to calculate the probability of underdogs winning, given the values of the predictor variables described below.

My final model tests competing influences of the legal model, litigant resources, and ideology variables to test the attitudinal and strategic interaction models. Specifically, the model will including the following variables: *Chevron* citation (dichotomous variable for whether the opinion was cited in the majority opinion), case characteristics (statute-specific dichotomous variables for whether a particular provision was cited in the majority opinion), litigant typology (values from 1–5), panel ideology (JCS score of median judge), ideological distance (JCS score of median judge by case year subtracted from median JCS score of the circuit), circuits (dichotomous variable for each circuit), gender (dichotomous variable for presence of a female judge), race (dichotomous variable for presence of a minority judge), amicus brief (dichotomous variable for if a brief was submitted), and respondent success (dichotomous variable for whether the respondent won).

**Dependent Variable: Underdog Success**

Each chapter will discuss a different statute with FIFRA and TSCA combined, but the dependent variable will be the same. *Underdog success* is a dichotomous variable indicating whether or not the comparative underdog is successful in the case before the Court of Appeals. This is a different approach than Songer and Sheehan (1992) who looked at whether the petitioner or respondent prevailed, because I wanted to focus on the resources of the litigants rather than their position in the case. Cases are
excluded if there is no clear “winner,” such as cases where the decision is denied and granted in part, affirmed and remanded, or affirmed and vacated in part. Cases with cross-appellees are also dropped from the analysis because a clear petitioner and respondent could not be coded.

**Independent Variables: Litigant Type**

For this variable, only the first petitioner and first respondent listed are coded using the 1–5 typology described previously. If an individual was acting within their organizational capacity, such as the head of the EPA, this litigant would be coded as the federal government, in contrast to an individual acting as a whistleblower who would be coded as an individual (Songer, Sheehan, Haire 1999). The coding strategy was used for ease of managing a large dataset, but it is important to note that many cases had multiple litigants and this coding decision will not take additional litigants into account. This coding approach also treats litigants of the same type equally. For example, large environmental organizations like the Sierra Club or Natural Resources Defense Council are coded as nonprofits (=2) as well as small community activist organizations, despite the resource differential. The typology is not without such limitations, but ultimately it provides the best approximation available for comparing resources large groupings of litigants have and what this means for underdog success. I expect this variable to have a negative relationship with underdog success.
**Hypothesis 1.** I expect upperdogs to remain the most successful litigants in environmental cases with the federal government remaining the most effective litigant type of those coded for this research.

**Hypothesis 2.** I expect litigant type to be negatively correlated with underdog success. As the opposing litigant has more resources, using the litigant typology as a proxy, the underdog will be less likely to win.

**Demographic Variables**

Each judge is coded for his or her Judicial Common Space (JCS) score, race, and gender (Epstein, et al. 2007). JCS scores range from -1 (most liberal) to 1 (most conservative). Cases in this dataset were heard either by three-judge panels of appellate judges, or a combination of appellate and district judges sitting by designation. JCS scores were included for all available judges at both the appellate and district courts. In the final model for each statute, the median JCS score for the panel is used. This is consistent with the judicial literature approach of JCS scores and liberal or conservative ideology in a political sense.

Little work has been done on minority behavior in environmental cases, but this data will allow comparisons between white and minority judges, building on prior works analyzing minority judicial behavior (Spohn 1990, Walker 1985). Race is measured by whether or not there is at least one minority judge on the panel. There are no independent theoretical expectations for how race will advantage or disadvantage underdogs, so this variable remains a control at this point my research.
The gender variable measures whether or not there is at least one female judge on the panel, building on the work by Boyd, Epstein, and Walker (2010), Collins and Moyer (2008), and Songer, Davis, Haire (1994). In previous research, female judges rule significantly different than their male counterparts in issue areas such as sexual harassment or employment discrimination. This finding has not been tested yet with environmental cases. I expect the presence of one or more women on an appellate panel to increase the likelihood of the underdog prevailing.

**Hypothesis 3.** The presence of a female judge on the panel will be positively correlated with underdog success.

**Circuits**

Following Wenner and Dutter’s approach (1988), there is a dichotomous variable for each appellate circuit (1–11) and the D.C. Circuit (12). Depending on the statute, one circuit is dropped as a baseline indicator. There are no theoretical expectations for the circuit control variables and they are included to control for any independent effects the location of a case decision might have.

An additional circuit-related variable included is ideological distance between the circuit and the panel issuing the case opinion. The median JCS score for the panel is subtracted from the median JCS score by circuit for the year the case was decided. Historically, some circuits such as the Fifth are more conservative while others such as the Ninth are measured as being more liberal. It is important to test for circuit-level
effects with each case in addition to JCS scores for each panel and see if the circuit-level ideology helps underdogs win their cases.

**Case Characteristics**

Each case is coded for specific statutory provisions to help understand whether litigants are more or less likely successful arguing on specific grounds as the legal model would suggest. Every statutory provision mentioned in a case during this time period is included in the dataset based on the list from Percival’s Statutory and Case Supplement (2011). Only provisions that appeared ten or more times are included in the final models for each chapter.

One valuable component of including case characteristics is gathering descriptive data on which legal provisions are most litigated at the Court of Appeals and how this varies by statute. For some statutes, we will observe cases primarily litigating definitions whereas others challenge administrative processes such as permits or management plans. Part of this research is first understanding the provisions litigants feel are most important in environmental law. One of the specific provisions I expect to see benefit underdogs is the citizen suit. All of the statutes, excluding FIFRA and TSCA, have a citizen suit provision allowing litigants to bring a case before the court provided the litigant proves statute-specific findings of endangerment and if the litigant is challenging the EPA’s failure to perform a non-discretionary duty. Since access to the courts can be an obstacle for litigants with
fewer resources, I expect that when citing this specific provision at the appellate level, underdogs are more likely to prevail.

**Hypothesis 4.** Underdogs will be more successful when bringing a case under the citizen suit provision.

A second aspect of case characteristics are their value in understanding the prevalence of *Chevron* and if it is cited as precedent to the extent literature would suggest. At this point in my research, each case is coded for whether *Chevron* is cited in the majority opinion. As discussed in Chapter One, the Administrative Procedure Act (APA) is the guiding statute for administrative law, whereas *Chevron* is one case ruling on administrative law. I did not code for citation to the APA but use *Chevron* citation as both an important case in environmental law and also a significant case for administrative law. Descriptively, I expect this precedent to be cited more often in cases where a federal agency is the petitioner or respondent because it instructs the courts to lean in the agency’s favor and support the agency’s decision as the expert authority. It is included for each case in the dataset because other litigant types may be using the precedent to persuade the court in their favor and because I only code the first party of each side in a case. Data limitations at this time do not enable examining which party, if any, made the *Chevron* claim; I only look at whether the opinion writer cited it in the final majority opinion. This limits interpretations on the value of *Chevron* to specific litigants types, but is sufficient to test how the case helps or hurts underdogs as a category.
Hypothesis 5. I expect underdogs to be less likely to win when *Chevron* is cited in the majority opinion.

**Amicus Briefs**

Literature on the influence of amicus briefs at the Supreme Court is well documented by scholars such as Collins (2007), but less is known about their role at the Court of Appeals. For environmental law, amicus briefs can play a critical role in providing judges with technical information they would otherwise not have. Judges in the D.C. Circuit will have the most experience dealing with federal agencies and judges in more politically liberal circuits such as the Ninth will have experience and be more favorable to environmental organizations, but for judges who do not regularly handle these types of cases, amicus briefs have the potential to be meaningful. Additionally, the number of amicus briefs can be a measure of issue salience for the court. Data limitations of Westlaw and LexisNexis prevented full access to the amicus briefs submitted, but a dummy variable for the presence of a brief is included in both the legal and attitudinal models. Considering the potential scientific value of amicus briefs, I expect them to be more advantageous for litigants who would lack the resources to provide competing research on their own.

Hypothesis 6. I expect amicus briefs to be statistically significant in favor of underdogs.
**Respondent Success**

Each case is coded for whether the petitioner or respondent prevailed. There is a dichotomous variable for whether the respondent won the case. At the appellate level, a large number of the cases are challenging federal agencies or the U.S. government, meaning the litigant with the greatest amount of resources will also be the most frequent respondent. Therefore, I expect the respondent winning to have a negative relationship with underdog success. Understanding this is a more controversial variable to include because of the federal government’s frequency as respondent, each statute is also analyzed without it and the results are presented in the respective chapters.

**Hypothesis 7.** I expect underdogs to be unsuccessful when the respondent wins.

**Organization of the Dissertation**

The remaining chapters in this dissertation will involve empirically testing the hypotheses using the data I gathered. Chapter 3 will focus on RCRA, which regulates the creation, transportation, storage, treatment and disposal of hazardous waste substances at a final waste site. It covers both nonhazardous solid wastes and hazardous wastes. Though similar to TSCA that also regulates chemical substances, RCRA is in a separate chapter because it is a cradle-to-grave system with different regulatory provisions. Descriptive statistics will be included to show the provisions being litigated under this statute in addition to quantitative analysis to test the hypotheses.
Chapter 4 is on the CAA, which was originally a health-based statute regulating air quality standards for six criteria pollutants. However as the initial health standards failed to make the meaningful progress hoped for, a set of amendments in 1990 led to the adoption of a stronger emphasis on technology. By the time period of study in this research begins, the EPA has shifted more toward regulating pollution source types and the required technology based on the source type and location. This chapter draws cases from years after this regulatory shift in addition to testing the influence of changes made by President Clinton and President Bush. Both descriptive data and quantitative analysis is presented in this chapter.

Chapter 5 examines the CWA which is a technology-based statute attempting to regulate discharges of pollution into navigable waters of the United States from a point source. Similar to the air quality standards of the CAA, the CWA has ambient water quality standards based on the designated use for the water. Any discharge must be listed in a permit, leading to a number of cases challenging permit approvals or denials. With the range of designated uses in the statute, there are a wide variety of litigants pursuing cases in this area of environmental law. Descriptive summaries of these litigant types, in addition to a quantitative analysis, are included in this chapter.

Chapter 6 is on FIFRA and TSCA. These statutes are combined in one chapter because they both regulate the manufacture and distribution of over 10,000 chemical substances at the production and market stages. The statutes are complementary with FIFRA regulating pesticides excluded by TSCA. Due to the nature of the chemicals involved and lengthy registration processes for both laws, businesses are the primary
litigant type. Descriptive and quantitative results are discussed in this final substantive chapter.

Chapter 7 will summarize all of the findings and evaluate implications for both judicial and environmental scholars. This dissertation makes an original contribution to understanding the types of cases litigated at the Court of Appeals, how different litigant types win, and finally factors that can help explain litigant success in environmental law.
CHAPTER 3
RESOURCE CONSERVATION AND RECOVERY ACT

Introduction
In 1978, residents of the Niagara Falls suburb Love Canal learned their community was on top of a toxic waste pit. Oils and fumes had existed for years with the community experiencing highly elevated rates of cancers, birth defects, miscarriages, and numerous chronic illnesses. Nearly 800 homes and an elementary school were built directly on the toxic pit of 352 million pounds of industrial waste from Hooker Chemical Company who had placed it on top of additional waste from Niagara and the U.S. Army (Collins 2010). The activism of community member Lois Gibbs to organize the Love Canal Homeowners Association catapulted her on to the national scene and made this the first toxic waste site to receive both widespread media attention and political concern, culminating in the passage of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (Collins 2010, 82). Toxic waste was suddenly a politically salient issue.

Love Canal, and the passage of CERCLA, had an important effect of strengthening the Resources Conservation and Recovery Act (RCRA), passed two years before Love Canal. RCRA’s strict procedures for containing, transporting, and treating, and disposing of hazardous wastes were reinforced with severe consequences for leaking and abandoned dumps under CERCLA (Buck 2006). Combined, these statutes established a body of environmental law regulating
hazardous wastes and the court system became involved in another area of environmental policy.

While CERCLA is a critical statute in this area of law, and related to RCRA with many RCRA corrective action sites later becoming listed as Superfund sites under CERCLA, it is not used in this analysis because its technical complexity and difficulty in classifying upperdog/underdog success makes it unsuitable for the coding scheme I utilize. The main focus of this chapter instead is the relationship between judicial behavior and litigant resources at the Court of Appeals using cases involving RCRA. Specifically, how do we explain underdog success in this policy area of hazardous wastes? Using key concepts and variables from Chapter 2, I examine the role litigant resources and case characteristics can have when challenging this statute and whether underdogs are able to prevail.

**Legislative Background for RCRA**

RCRA was one of these statutes passed towards the end of the ‘Environmental Decade’, setting acceptable levels of pollutants, specifying required technologies, and attempting to regulate a substance from its creation and release through final disposal. It looks at how hazardous wastes are used, handled, and discharged (Wenner 1982).

RCRA was enacted in 1976 as an effort to provide a cradle-to-grave monitoring system for solid and hazardous wastes. Congress amended the statute in 1984 to try and phase out disposal of toxic chemicals and force development of better technology to reduce the toxicity of hazardous wastes. Prior to this statute, there was
no hazardous waste office to manage or regulate these types of substances. RCRA regulates the creation, transportation, storage, treatment, and disposal of listed hazardous waste substances at a final waste site. The first question to answer, and the source of litigation in some cases, is whether the substance in question is a solid waste. Garbage, sludge, other discarded material in solid, liquid, or gaseous forms are all considered to be solid waste. Exclusions to this regulation include domestic sewage, irrigation return flows, individual discharges (covered under the Clean Water Act), and nuclear materials. The second question the statute speaks to is if the substance in question is hazardous based on four characteristics: ignitability, corrosivity, reactive, and toxicity (Ferrey 2007). Exclusions include household waste, agricultural wastes reused, utility waste from coal production, oil and gas, and mining/extraction by products.

The listing process in this statute is based on three categories of waste; hazardous wastes from nonspecific sources, hazardous wastes from specific sources, and commercial chemicals that are considered hazardous wastes when discarded. A business can petition the EPA or state for its waste to be delisted, but it must show that the waste at the facility is no longer hazardous. Consequently, industries and the permitting agency (either state or federal) are the main litigants in this policy area.

While RCRA technically covers both nonhazardous solid wastes and hazardous wastes, states have more responsibility to address and regulate nonhazardous solid wastes. Enforcement for RCRA provisions includes regulation by the EPA and other government entities and citizen suit provisions. The EPA is
responsible for establishing permit conditions, determining when the conditions are
violated and public welfare is endangered, and can demand information and access to
the business or contaminated site when needed. A state can get federal authority to
run a RCRA program if it receives approval from the EPA. A weakness of this
enforcement is its dependence on voluntary self-monitoring by the industries and on
the tracking system for waste generators and transporters.

One of the provisions built in to strengthen public accountability and address
these enforcement weaknesses is §6972 authorizing citizen suits. Citizen suits, under
§6972 of RCRA allow any individual to pursue a civil action against another person
or against the EPA for failure to perform “an act which is not discretionary.” The suit
must demonstrate “imminent and substantial endangerment” claims that directly
impact human healthy and the environment. Citizens cannot sue the EPA if the
agency chooses to not pursue action against an alleged RCRA violator and there are a
number of barriers to pursuing citizen suits. One of the largest barriers is that citizen
suits are preempted by state litigation or litigation filed by the EPA. In order to file a
suit, citizen plaintiffs must provide 60 days’ notice of intent to litigate or 90 days’
notice for imminent hazard actions, they may not try to stop the siting of a new
facility or issuance of a permit, they may not pursue a suit if the EPA is prosecuting
the action or a CERCLA clean-up, they may not pursue enforcement action if it
overlaps with state efforts, and any suit must allege “continuous or intermittent
violations” and cannot be based completely on past RCRA violations. In addition to
challenges of fewer resources, these limitations make it difficult for citizen suits to be
successfully pursued in the courts and put the burden on other litigant types to challenge the federal government and statute (Ferrey 2010). Ultimately, though litigants cannot regain recovery costs, citizen suits are one way for underdogs to pursue enforcement of environmental laws.

**Theoretical Relationships**

To understand if and how underdog litigants prevail in hazardous and solid waste cases under RCRA, I run a model with variables testing the legal model, litigant resources, and two variables to test for the influence of ideology (per the legal model) and strategic behavior. (See Appendix A for a detailed list of variables, measurement, and associated hypotheses for each model.)

The legal model argues that precedent and case facts best explain judicial behavior. For environmental cases, judges are specifically instructed by the *Chevron* precedent to defer to decisions made by the agencies, limiting their discretion even more for this issue area and most relevant to my focus on litigant resources, further advantaging upperdogs. RCRA further adds to this culture of deference by giving the EPA authority to make the critical listing decision for hazardous wastes and vesting primary permit jurisdiction in the agency. The legal model also emphasizes the role case facts can play in explaining judicial behavior. RCRA has unique provisions such as the types of solid and hazardous wastes necessary to regulate and it is important to test how such characteristics may influence litigant success not only in this issue area, but also in comparison to other environmental statutes. CERCLA is also included in
this model as a control measure. CERCLA governs the federal response to abandoned or uncontrolled hazardous waste sites, but has a number of similarities to RCRA and is important to control for since a RCRA site can later be classified a CERCLA “Superfund” site. There is no theoretical expectation for CERCLA and underdog success.

In contrast, the attitudinal model argues judges decide cases based on their ideology and that whether a judge is liberal or conservative matters most in explaining judicial outcomes. This approach would explain upperdogs winning a case in this area by the ideology of the three-judge panel or by ideology of the federal circuit. In order to control for this influence, I include two variables: panel ideology and ideological distance. Median JCS scores are used to measure ideology of the panel and circuits. Ideological distance is a variable intended to control for circuit influence on the panel, as described in Chapter 2. The median JCS score for the circuit in the year the case opinion was issued is used and panel ideology is subtracted to get the ideological distance between the circuit and panel.

Finally, I have a series of variables that are litigant type, federal circuits, and independent variables including gender and race of the panel, amicus briefs, and whether the respondent won. Litigant type tests Galanter’s (1974) haves/have-nots theory and Songer and Sheehan’s (1992) upperdog/underdog typology to determine if the type of the litigant and the litigant’s resources explain judicial behavior. By the nature of substances covered under RCRA and the listing process conducted by the EPA, I expect businesses and the federal government to be the most involved litigant
types. The federal government often prevails in appellate cases and I plan to look at whether they are as successful in RCRA cases.

Gender is included to determine whether or not it explains underdog/upperdog success in hazardous waste cases. We know that in sex discrimination cases, female judges vote more liberally, but not the extent to which gender can explain outcomes in environmental law broadly or hazardous waste specifically (Boyd, Epstein, and Walker (2010), Wenner and Ostberg (1993)). Similarly, race is an indicator as to whether or not the presence of a minority judge helps underdog litigants. Amicus briefs are considered a measure of salience by some judicial scholars and can also advantage underdog litigants, making them an important variable to include in the models. For this area of hazardous wastes, amicus briefs may help underdog litigants challenging businesses or help businesses challenging the state or federal regulatory authorities. All of these concepts are included in one model to determine which one(s) best explain underdog success in a multivariate setting. The specifics of the data and measurement will be discussed next.

**Research Design and Data**

I acquired the data from LexisNexis and Westlaw for cases decided between 1993–2008, covering the Clinton and W. Bush administrations. The initial search was done using the term “Resource Conservation and Recovery Act” in LexisNexis with a second search in Westlaw. With the exception of differences in supplemental materials and copyrights, there is little meaningful difference between the two
databases, but both search sites were used to ensure no cases were missed. There were also no major revisions during this time period to RCRA, making the cases during the time period comparable.

Searches in LexisNexis and Westlaw produced a large number of cases that did not meet the coding criteria. I read each case and excluded it if the opinion did not decide a statutory issue on the merits, if the petition was denied, remanded, or granted in part, or if the case only had a citation to the statute. A number of cases had split verdicts in which the court upheld part of the district court opinion and remanded or denied other claims. I was unable to determine the upperdog or underdog “winner” in these situations, and therefore the cases were excluded. The number of variables varied by statute and the only limitation I considered prior to starting the coding process was using a slightly abbreviated list of statutory provisions as noted in Percival (2011). RCRA included 115 variables and 157 observations. The final original dataset for RCRA is 157 case opinions.

**Data, Methods, and Hypotheses**

I collected and analyzed the data quantitatively due to the number of cases and variables to be included in the models. With a dichotomous categorical dependent variable measuring whether or not the underdog won the case (0=underdog loss, 1=underdog win), I use logistic regression model in STATA. This MLE regression technique is used because the dependent variable of underdog success can only have two predefined values (Halcoussis 2004). Logit produces a model estimate that can be
used to calculate the probability of underdogs winning, given the values of the predictor variables described below. Cases are excluded if there is no clear “winner,” such as cases where the decision is denied and granted in part, affirmed and remanded, or affirmed and vacated in part. Cases with cross-appellees are also dropped from the analysis because a clear petitioner and respondent could not be coded.

The final model controls for the attitudinal variable of panel ideology, and strategic behavior (ideological distance between the panel and circuit), but largely focuses on the legal model and case characteristics and precedents this model predicts should explain judicial decisions. Specifically, it tests the following variables: circuits (dummy control variable for each circuit), typology for respondent type (1–5), typology for petitioner type (1–5), race (dichotomous variable for presence of a minority judge), gender (dichotomous variable for presence of a female judge), panel ideology (JCS score of median judge), ideological distance (distance between median JCS score of the circuit and the panel), amicus brief (dichotomous variable for if a brief was submitted), *Chevron* citation (dichotomous variable for whether the opinion was cited in the majority opinion), CERCLA citation (dichotomous variable for whether it was also a CERCLA case), respondent success (dichotomous variable for whether the respondent won), and case characteristics (statute-specific dichotomous variables for whether a particular provision was cited in the majority opinion). Appendix B notes the characteristics included in the final model.
Each case is coded for specific statutory provisions to help understand whether litigants are more or less likely successful arguing on specific grounds. Every statutory provision mentioned in a case during this time period is included. Only provisions that appeared ten or more times are in the final model. This included the following: §6901 (congressional findings), §6921 (identification and listing of hazardous waste), §6922 (standards applicable to generators of hazardous waste), §6924 (standards applicable to owners and operators of hazardous waste treatment, storage, and disposal facilities), §6925 (permits for treatment, storage, or disposal of hazardous waste), §6928 (federal enforcement), §6941 (objectives of subchapter IV on state or regional solid waste plans), §6972 (citizen suits), §6973 (imminent hazard), §6976 (judicial review), §6902 (objectives and national policy), §6903 (definitions), and §6926 (authorized state hazardous waste programs). The hypotheses for the model are listed below.

**Hypotheses**

1. I expect upperdogs to remain the most successful litigants in RCRA with the federal government remaining the most effective litigant type.
2. I expect litigant types to be negatively correlated with underdog success. As the opposing litigant has more resources, using the litigant typology as a proxy, the underdog will be less likely to win.
3. The presence of a female judge on the panel will be positively correlated with underdog success.
4. Underdogs will be more successful when bringing a case under the citizen suit provision (§6972).

5. I expect underdogs to be less likely to win when *Chevron* is cited in the majority opinion.

6. I expect amicus briefs to be statistically significant in favor of underdogs.

7. I expect underdogs to be unsuccessful when the respondent wins.

**Results**

Descriptively, upperdog litigants were very successful in these toxic waste cases. From 1993–2008, underdogs only prevailed in 23% (n=36) of the 157 cases. Individuals and businesses were the most frequent petitioners, 27.39% (n=43) and 45% (n=70), respectively. Individuals often challenged convictions under RCRA, particularly jury instructions and fines for violating terms of the statute from the district court. They also brought a number of cases under the citizen suit provision. Businesses frequently challenged disposal costs, identification and listing of hazardous wastes, and permits for treatment, storage, or disposal of hazardous waste.

Businesses and the federal government appeared most often as respondents, 24% (n=38) and 57.32% (n=90), respectively. The largest number of statutory provisions cited were from Subchapter III of RCRA, which addresses Hazardous Waste Management and largely pertains to how businesses operate hazardous waste facilities and federal/state monitoring of the facilities. Additionally, many of the cases were litigated under Subchapter 1, focusing on congressional findings, national
policy, and definitions. The classification of a hazardous waste has significant implications for the permitting process and how a business must treat, store, and dispose of a particular hazardous waste, making it a heavily litigated area for both businesses seeking fewer restrictions and federal environmental agencies concentrated on environmental health and safety.

Nearly twenty-percent of the cases were decided in the D.C. Circuit which is an expected result in light of the federal government’s participation in a majority of the litigation and the government’s option to file suit in the D.C. Circuit. Another 20% of the cases were decided in the 6th and 9th Circuits. See Table 1 below.
Finally, 78% (n=123) of RCRA cases were published which is similar to publication rates of the other statutes in this dataset.\(^2\) With Ringquist and Emmert

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\(^2\) Publication rates for the other statutes in this dataset are as follows: 70.77% of FIFRA/TSCA cases, 77% CAA cases, and 59% of CWA cases.
estimating only five to ten-percent of cases get published, this is a much higher rate that does not represent the actual case population. The findings may be biased as a result when comparing this dataset to the universe of cases heard by the Court of Appeals (Keele et al. 2009).

Only 17% (n=27) of cases had an amicus brief submitted in support of either party which is much lower than cases from the same time period for the Clean Water Act and Clean Air Act. A possible explanation for this could be litigants choosing to be a party to the case instead of submitting a brief. With only the first petitioner and first respondent coded, participating by other litigants was not included in the analysis.

One of the more surprising results was how little *Chevron* was cited in the majority opinions; 85% of the cases made no mention of what is arguably one of the most important precedents in administrative law. As discussed in Chapter One, this may be the result of judges using the Administrative Procedure Act instead.

Since I had a dichotomous dependent variable, I ran a logistic regression model in STATA. Table 2 below illustrates the final results. The only variables reaching a meaningful level of statistical significance (p<0.05) were the First Circuit, litigant (whether the petitioner or respondent won the case), presence of a woman on the panel, and four case characteristics; objectives and national policy, definitions, federal enforcement, and citizen suits.
Table 2: Logit Model of Underdog Success for RCRA Cases

<table>
<thead>
<tr>
<th></th>
<th>Model without Litigant Included</th>
<th>Final Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>LR Chi-2</td>
<td>58.45</td>
<td>92.22</td>
</tr>
<tr>
<td>Pseudo R2</td>
<td>0.3779</td>
<td>0.5963</td>
</tr>
<tr>
<td>Circuit 1</td>
<td>0.8228 (0.617)</td>
<td>5.211001 (0.033)*</td>
</tr>
<tr>
<td>Circuit 2</td>
<td>0.3131 (0.852)</td>
<td>1.953205 (0.463)</td>
</tr>
<tr>
<td>Circuit 3</td>
<td>2.7783 (0.084)</td>
<td>3.210073 (0.207)</td>
</tr>
<tr>
<td>Circuit 4</td>
<td>1.2044 (0.358)</td>
<td>2.628972 (0.153)</td>
</tr>
<tr>
<td>Circuit 5</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>Circuit 6</td>
<td>−0.8507 (0.572)</td>
<td>−4.814703 (0.129)</td>
</tr>
<tr>
<td>Circuit 7</td>
<td>3.0477 (0.025)*</td>
<td>3.675608 (0.060)</td>
</tr>
<tr>
<td>Circuit 8</td>
<td>0.1722 (0.909)</td>
<td>2.782111 (0.134)</td>
</tr>
<tr>
<td>Circuit 9</td>
<td>1.6447 (0.342)</td>
<td>1.768461 (0.559)</td>
</tr>
<tr>
<td>Circuit 10</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>Circuit 11</td>
<td>0.8655 (0.571)</td>
<td>0.9342952 (0.723)</td>
</tr>
<tr>
<td>D.C. Circuit</td>
<td>−1.2347 (0.401)</td>
<td>−3.263029 (0.160)</td>
</tr>
<tr>
<td>Respondent type</td>
<td>−0.2231 (0.494)</td>
<td>−0.0102694 (0.981)</td>
</tr>
<tr>
<td>Petitioner type</td>
<td>0.4949 (0.103)</td>
<td>0.5450616 (0.194)</td>
</tr>
<tr>
<td>Minority judge</td>
<td>1.1077 (0.141)</td>
<td>1.994798 (0.088)</td>
</tr>
<tr>
<td>Female judge</td>
<td>0.5329 (0.430)</td>
<td>3.41204 (0.013)**</td>
</tr>
<tr>
<td>Panel ideology</td>
<td>0.3117 (0.745)</td>
<td>8.10024 (0.144)</td>
</tr>
<tr>
<td>Circuit ideology</td>
<td>2.5474 (0.368)</td>
<td>…</td>
</tr>
<tr>
<td>Amicus</td>
<td>0.3586 (0.710)</td>
<td>−0.2382526 (0.858)</td>
</tr>
<tr>
<td>Chevron</td>
<td>0.7019 (0.448)</td>
<td>1.750063 (0.206)</td>
</tr>
<tr>
<td>CERCLA</td>
<td>1.0756 (0.172)</td>
<td>0.4129439 (0.699)</td>
</tr>
<tr>
<td>6901</td>
<td>0.7652 (0.217)</td>
<td>−0.3174412 (0.732)</td>
</tr>
<tr>
<td>6902</td>
<td>1.5446 (0.119)</td>
<td>4.034388 (0.035)*</td>
</tr>
<tr>
<td>6903</td>
<td>0.9984 (0.197)</td>
<td>2.629468 (0.048)*</td>
</tr>
<tr>
<td>6921</td>
<td>−0.3567 (0.707)</td>
<td>−1.890171 (0.200)</td>
</tr>
<tr>
<td>6922</td>
<td>1.8567 (0.252)</td>
<td>4.575682 (0.127)</td>
</tr>
<tr>
<td>6924</td>
<td>0.8274 (0.301)</td>
<td>−0.4295536 (0.720)</td>
</tr>
<tr>
<td>6925</td>
<td>−0.3284 (0.758)</td>
<td>0.107348 (0.941)</td>
</tr>
<tr>
<td>6926</td>
<td>−0.0232 (0.985)</td>
<td>0.5281266 (0.800)</td>
</tr>
<tr>
<td>6928</td>
<td>−1.7207 (0.065)</td>
<td>−3.83424 (0.013)**</td>
</tr>
<tr>
<td>6941</td>
<td>3.673 (0.002)**</td>
<td>3.639423 (0.018)*</td>
</tr>
<tr>
<td>6976</td>
<td>−1.8098 (0.030)**</td>
<td>−2.767747 (0.053)*</td>
</tr>
<tr>
<td>Litigant</td>
<td>…</td>
<td>−5.453642 (0.000)**</td>
</tr>
<tr>
<td>Distance</td>
<td>…</td>
<td>7.126132 (0.149)</td>
</tr>
</tbody>
</table>

* p<0.05  **p<0.01  ***p<0.001
Looking first at the circuit results, the Sixth Circuit approached significance with a p-value of 0.059, but only the First Circuit was significant at 0.043 in favor of underdog success. This was one of the strongest variables in the model for predicting underdog success. Descriptively, different litigants were more successful in some circuits than others. Individuals were most successful in the Ninth (n=3) and Eleventh (n=2) Circuits and least successful in the Tenth (n=17) and Sixth (n=16). Nonprofit litigants were equally successful across a majority of the circuits (n=1), but lost the greatest number of cases in the D.C. (n=31) and the Ninth (n=17) Circuit. Businesses prevailed most often in the Sixth (n=8) and D.C. (n=6) Circuits and lost the most number of cases in Ninth (n=15), Tenth (n=15), and D.C. (n=26) Circuit. State and local governments prevailed the most in the Second (n=5) and Fourth (n=3) Circuits and were the least successful in the D.C. (n=32) and Ninth (n=16) Circuits. Finally, the federal government won most in the D.C. (n=25) and Tenth (n=12) Circuits. The EPA was the most successful in the D.C. Circuit, winning 26 of their cases and only losing six in that circuit.

One measure was included to control for the effect of ideology; panel ideology using the median JCS score of judges on the panel. This variable did not achieve statistical significance. The mean JCS panel score for RCRA cases was 0.0927 and scores ranged from −0.543 to 0.581. Each judge was also coded for party of the appointing president. 31.79% of the panels had two Democrat-appointed judges and 6.62% were entirely comprised of judges appointed by Democrat presidents.
The strategic behavior variable, ideological distance, was also not statistically significant, meaning we cannot draw meaningful conclusions about the existence of strategic behavior by the panel judges. This variable is not traditionally used in the underdog/upperdog literature, but my approach of using the ideological distance between the panel and circuit is consistent with the judicial literature and it was an important control measure for effects of circuit ideology. The mean distance was 0.0930872 and the range was −0.714 to 1.045.

Independent variables in the legal model performed well, with four reaching statistical significance. §6928, federal enforcement, significantly decreased the likelihood of the underdog winning. This section addresses how the Administrator enforces violations of compliance orders, process for public hearings, criminal penalties, and consequences for “knowing endangerment” which was the basis for many individuals challenging their convictions under RCRA. In many of the match-ups under this provision, underdogs, most often individuals or businesses, were appealing a decision made by the EPA and the courts deferred to the agency’s initial decision.

The other statutory provision decreasing the likelihood of underdog success was §6972. This section specifies the process for citizen suits including prohibited actions, notice, costs, and the necessary process to commence a civil action. For underdogs, this provision provides the opportunity to challenge an upperdog, but for the cases during this time period, it was not a section on which they prevailed.
The three provisions underdogs successfully argued were §6903 and §6902. §6903 specifies foundational terms of the statute and 43 cases in the dataset challenged definitions under this section. The specific definitions are important because they clarify obligations all parties have when dealing with hazardous waste including the required technologies, disposal processes, agency actions, and others. Underdogs successfully challenged how these terms were defined, whether by the EPA or the lower courts.

The most successful provision for underdogs was §6902, Objectives and National Policy. The purpose of §6902 is to “promote the protection of health and the environment and to conserve valuable material and energy resources.” This section specifies how technical and financial assistance is provided to State and local governments, partnerships between Federal and state entities, and other waste management practices. With only twelve cases citing this provision, this was one of the surprising results.

**Hypothesis 1.** I expect upperdogs to remain the most successful litigants in RCRA with the federal government remaining the most effective litigant type.

The data for RCRA support this hypothesis. Businesses and industries won 47 (or 30%) of RCRA cases to which they were a party. They were the second most successful litigant type after the federal government who won 49% (n=77) cases. Nonprofit organizations were the least successful and won only seven out of 157
cases. Individuals were only marginally more successful, winning nine (or 6%) of the cases in which they were involved.

**Hypothesis 2.** I expect litigant types to be negatively correlated with underdog success. As the opposing litigant has more resources, using the litigant typology as a proxy, the underdog will be less likely to win.

With neither petitioner nor respondent type statistically significant, the data does not support or disprove this hypothesis. Descriptively, the data show upperdogs won 77% (n=121) of the cases under this statute. When businesses won the case, the upperdog was successful in 28 of the cases and the underdog in 19 of them. Businesses faced the federal government most often due to the nature of this statute, but with winning 50% of its cases, the federal government made underdog success unlikely. Table 3 below illustrates the frequency of each litigant type facing the other types and the frequency of underdog success.
Table 3: Percentage of Cases in Which Underdogs Were Successful under RCRA by Litigant Type
(n=Number of Match-ups Between Litigant Types)

<table>
<thead>
<tr>
<th>Petitioner</th>
<th>Individual</th>
<th>Nonprofit</th>
<th>Business</th>
<th>State and Local Government</th>
<th>Federal Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td>...</td>
<td>...</td>
<td>7.69%</td>
<td>0%</td>
<td>8.33%</td>
</tr>
<tr>
<td>(n=13)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonprofit</td>
<td>100%</td>
<td>...</td>
<td>66.67%</td>
<td>20%</td>
<td>14.29%</td>
</tr>
<tr>
<td>(n=1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>50%</td>
<td>50%</td>
<td>36.36%</td>
<td>60%</td>
<td>20.83%</td>
</tr>
<tr>
<td>(n=1)</td>
<td>(n=4)</td>
<td>(n=11)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State and Local Government</td>
<td>100%</td>
<td>100%</td>
<td>50%</td>
<td>...</td>
<td>25%</td>
</tr>
<tr>
<td>(n=1)</td>
<td>(n=1)</td>
<td>(n=4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal Government</td>
<td>100%</td>
<td>100%</td>
<td>16.67%</td>
<td>100%</td>
<td>...</td>
</tr>
<tr>
<td>(n=1)</td>
<td>(n=1)</td>
<td>(n=6)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis 3. The presence of a female judge on the panel will be positively correlated with the liberal outcome of underdog success.

The only demographic variable reaching statistical significance was the presence of a woman on the panel. As hypothesized, the presence of a woman on the panel increased the likelihood of the underdog winning. 50.99% (n=77) of the panels had at least one female judge. The significance of a woman on the panel is unique to RCRA, compared to other statutes such as the Clean Water Act and Clean Air Act. More research is needed to understand why these cases are unique.

Figure 1 illustrates the probability of an underdog’s success when a woman or minority was on the panel. An underdog’s probability of success was highest, 0.19, when there was both a woman and minority on the panel. The probability of success
was lowest when there was neither a woman nor minority on the panel (0.01) or when there was only a minority present (0.01). If there was only a woman on the panel, an underdog’s probability of success was 0.03.

**Figure 1: Probability of Underdog Success in RCRA Cases**

**Hypothesis 4.** Underdogs will be more successful when bringing a case under the citizen suit provision (§6972).

The citizen suit provision was almost statistically significant (p<0.057), but in the opposite direction I expected. Instead of helping underdog litigants, underdogs were very *unsuccessful* when pursuing RCRA cases on this provision. Looking at all of the RCRA cases, §6972 was cited 40% of the time (n=63). Upperdogs won 48 cases when this section was cited in contrast to underdogs only winning 15. Businesses won 24 cases when §6972 was under dispute and the federal government
prevailed in 20 cases. Individuals and nonprofit litigants only won four cases each when citizen suits were one of their legal claims.

As described earlier, citizen suits are an opportunity for litigants to commence a civil action and be awarded litigation costs. The financial costs can be an important consideration for underdog litigants seeking to recoup expenses from the legal process. Businesses involved in handling RCRA substances and cases, whether they are generators, transporters, or disposal facilities, invest a significant amount of financial resources to meet the statute’s technology requirements and citizen suits provide one means of getting some of the litigation costs back. However, this was not the most successful provision for underdog litigants.

**Hypothesis 5.** I expect underdogs to be less likely to win when *Chevron* is cited in the majority opinion.

Citation to *Chevron* did not achieve statistical significance. It was only cited in 15% of the cases, suggesting it is perhaps not as prevalent or meaningful a precedent as the judicial literature suggests. Another possibility is that *Chevron* is considered settled law and there are other cases judges consider as more important precedents for RCRA cases today. Judges may also be citing the APA instead of a single case such as *Chevron* due to the statute’s procedures for agency deference.

**Hypothesis 6.** I expect amicus briefs to be statistically significant in favor of underdogs.
This variable did not achieve statistical significance, so there is no evidence to support this hypothesis. One possible explanation could be the measurement used for this variable. Data on which party submitted the amicus brief or for which party the brief was submitted in support of was not available and this information would likely have enabled better analysis of whether amicus briefs help underdog litigants.

Hypothesis 7. I expect underdogs to be unsuccessful when the respondent wins.

As shown in Tables 2 and 3, if the prevailing party was the respondent, the likelihood of the underdog winning dramatically decreased. This is likely due to the federal government appearing as the respondent 57% of the time.

Success of the respondent is one of the more controversial variables to include in the model, but its removal significantly decreases the explanatory power of the model as illustrated in Table 2, suggesting a problem of an underspecified model. It is also consistent with judicial literature to include respondent success when explaining judicial behavior. The more fully specified model is therefore used for this analysis.

Conclusion

This statute provides insight into how hazardous waste cases are decided at the Court of Appeals, giving underdog litigants insight into case provisions on which they are more or less likely to prevail. §6902 and §6941, two sections explaining underdog success, are both general parts of the statute and describe broad goals and objectives of RCRA. §6902 also emphasizes protection of human health and the environment,
which was a goal of RCRA since its inception, and therefore an unsurprising provision of litigation. The greater ambiguity of these sections, with more provisions of greater specificity, may have enabled underdog litigants to make persuasive arguments and complicated the court’s tendency to defer to the federal government.

Upperdogs were more likely to win when §6928 or §6972 were cited, the former addressing federal enforcement and the latter specifying provisions of a citizen suit under RCRA. When considering the deference of the APA and *Chevron*, it is unsurprising that courts would defer to upperdogs under these technical sections. §6928 specifically details compliance orders, public hearings, criminal and civil penalties, and corrective action orders. At the district courts, underdog litigants such as businesses would have challenged issues of fact with the court when assessing penalties or evaluating whether administrative hearing processes were properly followed. By the time the case reaches the appellate courts, businesses or individuals had less room to contest the action leading to the penalty and in many cases were seeking a reduction of fines or timeline of corrective actions. If the court felt the EPA had properly followed required administrative procedures, it would defer to the agency and the underdog litigant opposing the agency was unsuccessful.

Prior to this original data collection and analysis, I would have expected *Chevron* to play a larger role in explaining outcome. The absence of citation to this statute was a surprising result, but may be the result of coding or a culture of agency deference created over the years by the APA. Future research is needed to determine the influence of the APA or language suggesting deference to federal agencies.
without citing *Chevron* specifically. Additionally, the significance of a female judge on the panel for underdog success is an important contribution of this research and unique to this statute of the dataset. The role of gender in environmental cases has not been empirically tested before with hazardous waste cases, making it an important and interesting explanatory variable. More research is needed into understanding why gender only mattered for this statute.

For RCRA, variables testing the legal model best explain underdog success or failure. The data did not support the role of ideology or strategic behavior explaining judicial outcomes, but there were only two variables testing for these influences and they were not the primary focus of analysis. Overall, previous research demonstrating the success of upperdogs is confirmed with this dataset of RCRA cases though underdogs were able to prevail in certain cases depending on which section they chose to litigate. Underdog litigants pursuing RCRA cases should understand they are more likely to win in the First Circuit and when challenging district court rulings on less procedural or specific provisions of the statute.

Opposing the federal government will remain an uphill battle, but the findings from RCRA cases suggest windows of opportunity to prevail do exist. The next chapter will look at Clean Air Act cases and whether similar opportunities exist for underdogs litigating air pollution regulations.
CHAPTER 4
CLEAN AIR ACT

Introduction

In 2010, the Environmental Protection Agency (EPA) marked the 40th anniversary of the Clean Air Act’s (CAA) passage. Signed by President Richard Nixon on December 31, 1970, the EPA estimates the statute has prevented over 200,000 premature deaths, helped avoid 700,000 cases of chronic bronchitis, and significantly improved the nation’s air quality by targeting six of the leading air pollutants (EPA, 2010). The agency’s 2011 report states the CAA and its amendments have cost $65 billion in implementation costs, but will have reaped direct benefits of $2 trillion by the year 2020 (EPA, 2011). Despite the economic and health benefits of this legislation, the statute has been controversial, particularly to industries facing a new regulatory system with additional costs of compliance. The controversy added a new area of environmental law to be ruled on by the courts and will be the focus of this chapter.

I look at cases involving the Clean Air Act (CAA) at the Court of Appeals. Variables described in Chapter 2 are used to test the legal model and litigant resource theory to provide a better understanding of the relationship between judicial behavior and decisions handed down by the federal circuits. Historically, this statute marks the beginning of the ‘Environmental Decade’ in 1970 and was one of the first large-scale federal efforts at environmental regulation. The regulatory framework in the CAA
was used as a model for subsequent legislation in this area, making it an important one to understand and examine for litigant success.

**Legislative Background**

The Clean Air Act’s origins can be found in the Air Pollution Control Act (APCA) of 1955 that was the first federal statute on air pollution. This legislation focused on supporting research on air pollution. In 1963, the first federal attempt to address air pollution control was made through the Clean Air Act. The statute marked a significant expansion of the federal government’s role and authorized the Department of Health, Education, and Welfare to formulate air quality standards through discussions with polluters and government representatives (Ferrey 2010). It moved beyond the APCA to include monitoring and controlling air pollution. A few years later, the Air Quality Act (AQA) of 1967 bolstered these federal efforts and expanded federal research support and enforcement into interstate air pollution transport. The most significant addition of the AQA was its requirement for stationary source inspections, which later became a critical part of the amended CAA.

In 1970, Congress amended the CAA and created a cooperative relationship between the federal government and states. The primary focus of this amendment was regulating stationary (mostly industrial) sources and mobile source emissions. With creation of the EPA the same year, enforcement powers of the federal government to regulate air pollution also expanded under this amendment. The 1970 amendments added four major regulatory programs: National Ambient Air Quality Standards
(NAAQS) in §109, New Source Performance Standards (NSPS) in §111, National Emission Standards for Hazardous Air Pollutants (NESHAPs) in §112, and State Implementation Plans (SIPs) in §110. NAAQS were set for six criteria pollutants: carbon monoxide, sulfur dioxide, oxides of nitrogen, volatile organic compounds, particulates, and lead (Percival et al. 2009). Minimum technology-based standards for emissions were set based on the NAAQS for stationary sources. States bore the responsibility to enforce these standards through State Implementation Plans (SIPs) that were also federally enforceable (Moya and Fono 2011). NSPS are technology-based standards set for stationary sources that regulate “new, modified and reconstructed affected facilities in specific source categories such as manufacturers of glass, cement, rubber tires and wool fiberglass” (EPA 2013). NESHAPs were created for hazardous air pollutants emitted by stationary sources and include asbestos, beryllium, mercury, vinyl chloride, benzene, arsenic, and radon/radionuclides (EPA, 2013).

To strengthen the statute further, the next wave of CAA amendments occurred in 1977. At this time, the EPA was evaluating the success of the NAAQS and observed the need for geographic-specific reforms based on an area’s success or failure at meeting the standards. Provisions for areas meeting the NAAQS were called Prevention of Significant Deterioration (PSD) and new facilities in these areas were required to use the Best Available Control Technology (BACT) (Moya and Fono 2011). Existing facilities in non-attainment (NA) areas were required to use “reasonably available control technology” (RACT) while new facilities had a stricter
standard of “lowest achievable emission reduction” (LAER) technology (Percival et al. 2009). These changes reflect the statute’s goal of not only maintaining air quality, but also improving it in the long-term.

The last major revision to this statute occurred in 1990 during the H.W. Bush administration. The 1990 amendments placed an emphasis on acid rain, stationary source operating permits, and considerably improving federal enforcement powers. Since the 1990 amendments, a large portion of cases arise from one of the CAA’s regulatory provisions, specifically § 108/109 (NAAQS), § 111 (New Source Performance Standards), or § 112 (emissions standards) (Moya and Fono 2011).

The enforcement powers strengthened in the 1990 Amendments are a contested part of the statute today. These enforcement provisions for the EPA include civil actions, administrative actions, and field citations. The CAA also has a provision allowing individuals or private interest groups to file citizen suits against the EPA or a private party for civil penalties. Before a suit is filed, the EPA must be given a 60-day notification as a grace period for compliance. If the EPA chooses to pursue the case, the citizen suit becomes irrelevant. Importantly, this statute allows for attorney fees to be awarded if the citizen or group is successful (Ferrey 2010). With individuals and nonprofit groups (“underdogs”) who operate with more limited budgets, awarding attorney fees can be a critical factor enabling them to bring suits challenging a business or federal agency “upperdog.” This is comparable to the citizen suit provisions in the other statues analyzed in this research.
The statute also includes criminal penalties levied on individuals for any violations “knowingly” committed by the accused which include forging records, refusing to pay permit fees, failing to install mandated equipment to monitor emissions, not following procedures set forth in SIPs, or the most serious violation where a “source knowingly releases hazardous emissions creating ‘imminent danger of death or serious bodily injury.’” If convicted of these actions, a corporation or individual acting on behalf of a corporation could face a large fine and jail (Ferrey 2010). There are also provisions and protections within the CAA to protect and address whistleblower complaints. A number of the cases from 2001–2007 at the appellate courts include whistleblower complaints and decisions made by Administrative Review Boards (ARBs) who originally heard the dispute.

The CAA includes citizen provisions, but the procedural requirements established make it very difficult for individuals to pursue claims under this statute. Individuals must understand the science behind the act and have the resources to prove how the federal or state actor erred, which can require extensive research and testing. Nonprofits or businesses wishing to challenge a federal agency must overcome this research and resource hurdle, which means that any party opposing an agency, including businesses, is the underdog. Although it is difficult for underdogs to pursue litigation in this area, they still chose to do so and in some cases succeed. In this chapter, I examine if and how underdog litigants are able to challenge one of the most significant pieces of environmental legislation in the United States.
Theoretical Relationships and Concepts (See Appendix A)

The primary models I test in this chapter are the legal model and role of litigant resources. If the legal model explains judicial outcomes, then the significant variables will be those measuring citation to case characteristics or the *Chevron* precedent. As described in Chapter 2, every case characteristic appearing ten or more times is tested in the final model. For the Clean Air Act, the following provisions cited in ten or more cases are as follows: §7401–7671 (general citation to the CAA), §7401 (congressional findings and declaration of purpose), §7409 (national primary and secondary ambient air quality standards), §7410 (state implementation plans for national primary and secondary ambient air quality standards), §7607b (judicial review), §7607b1 (petition to EPA administrator), §7607d9a (whether Administrator action is arbitrary or capricious), §7661c (permit requirements and conditions), and §7661d (notification to Administrator and contiguous states). Appendix B also references the case provisions included in the final model.

*Chevron* is coded for every statute for this dissertation, but its inclusion in the CAA model is of particular importance because it was a CAA case. In *Chevron*, the Supreme Court upheld the EPA’s “bubble concept,” which allowed the agency to interpret “stationary source” to mean that all devices emitting pollution in the same industrial grouping should be treated as though they were in a single “bubble” (Moya and Fono 2011). This is important not only on substantive grounds for judges interpreting the statute, but on procedural grounds for setting a precedent on when courts should defer to an agency’s interpretation of terms in environmental laws. It
has become an important case for agency deference and this chapter tests whether it explains judicial outcomes at the Court of Appeals for air pollution cases.

The same two variables from Chapter 3 controlling for the influence of ideology are included; panel ideology and ideological distance between the circuit and panel. For these variables I use Judicial Common Space (JCS) scores (Epstein et al. 2007, Poole and Rosenthal 1997). These are built from the Poole and Rosenthal scores to get the ideal policy point of Supreme Court justices and comparable measures for lower court judges. Most of the justices on the CAA cases are from the appellate courts, but district court judges sit by designation at times and the JCS scores exist for most judges in both courts. For the panel ideology measure, I use the median JCS score for judges on the panel. For ideological distance, I subtract the median JCS score for the panel from the median JCS score of the circuit the year the case was decided.

All variables are combined in one model to allow the variables to directly compete with one another. I also include the following explanatory variables: federal circuits (dichotomous variable for each circuit), petitioner and respondent type (using the Songer typology), respondent success (dichotomous variable for whether the respondent won), presence of a minority on the panel (dichotomous variable), presence of a woman (dichotomous variable), and amicus brief (dichotomous variable for whether a brief was submitted in support either the petitioner or respondent).
Data, Methods, and Hypotheses

I analyze the data quantitatively due to the number of cases and variables to be included in the models. This modeling procedure uses a dichotomous categorical dependent variable measuring whether or not the underdog won the case (0=underdog loss, 1=underdog win). I use a logistic regression model in STATA because this MLE regression technique accounts for the fact that the variable of underdog success can only have two predefined values (Halcoussis 2005). Logit produces a model estimate that can be used to calculate the probability of underdogs winning cases involving the Clean Air Act, given the values of the predictor variables described below.

I acquired data from LexisNexis and Westlaw for cases decided between 1993–2008, covering the Clinton and W. Bush administrations. The initial search used the term “Clean Air Act” in LexisNexis with a second search in Westlaw. Both search sites were used to ensure no cases were missed. There were also no major revisions during this time period to CAA, making the cases during the time period comparable and sufficient for a quantitative analysis.

Searches in LexisNexis and Westlaw produced a large number of cases that did not meet the coding criteria. As with all statutes, I read each case and excluded it if the opinion did not decide a statutory issue on the merits, if the petition is denied, remanded, or granted in part, or if the case only has a citation to the statute. A number of cases did have split verdicts in which the court would uphold part of the district court opinion and remand or deny other claims. I was unable to determine the upperdog or underdog “winner” in these situations, and therefore the cases were excluded. The number of variables varied by statute and the only limitation I
considered prior to starting the coding process was using a slightly abbreviated list of statutory provisions as noted in Percival (2011). The CAA included 549 variables and a random sample of 100 cases. Due to the volume of cases that dealt with the Clean Air Act, a random sample was taken instead of the full universe. Cases were selected by compiling a complete list of all qualifying cases, then assigning random numbers using Microsoft Excel’s random number generator. Excel sorted the cases by the random numbers and I selected the first 100 for this analysis. This process of random selection ensures that there was no bias in which cases were selected; every case had the same probability of being selected and there was no researcher bias introduced since Excel did the random number assignment. We can be certain that the random sample is representative of the full population of cases and does not harm the quality of the data or conclusions in any way (Jupp 2006). The final original dataset for this statute is 100 cases.

**Hypotheses**

The hypotheses for the CAA are based on my expectations described previously in Chapter 2 and the results for each one will be discussed in the following results section.

1. I expect upperdogs to remain the most successful litigants in the CAA with the federal government remaining the most effective litigant type.

2. I expect litigant types to be negatively correlated with underdog success. As the opposing litigant has more resources, using the litigant typology as a proxy, the underdog will be less likely to win.
3. The presence of a female judge on the panel will be positively correlated with the liberal outcome of underdog success.

4. Underdogs will be more successful when bringing a case under the citizen suit provision (§7604).

5. I expect underdogs to be less likely to win when *Chevron* is cited in the majority opinion.

6. I expect amicus briefs to be statistically significant in favor of underdogs.

7. I expect underdogs to be unsuccessful when the respondent wins.

**Results**

This sample of 100 cases was drawn from a population of 292 using a random number generator in Excel as described above. The largest number of cases was decided in 1999 (n=11, 11%) and 2003 (n=9, 9%). Most of the cases were published (77%, n=77). As discussed in Chapter 1, this is much higher than the standard publication rate, and the conclusions may be biased as a result. Compared to the other statutes in the research, *Chevron* was cited often with 39 of the opinions (39%) citing it. Only 19 cases had amicus briefs, but this may reflect the greater involvement of nonprofit litigants as parties to the case. Just over half of the cases (n=55) had at least one woman on the panel, but only 33 had one or more minority justices.

Similar to the other statutes, in these cases the federal government was the most successful litigant type, winning 63 (63%) of the cases in this sample. The EPA won 60 (60%) of these cases. Contrasted with other statutes involving different
federal agencies or military branches, the EPA was the main agency for air pollution cases. This may be due to the statute’s enforcement powers specifically requiring agency actions and due to the state plans being federally enforceable by the EPA (Moya and Fono 2011). The federal government was also the most frequent respondent (n=81).

As illustrated in Table 4 below, a majority of the cases involved match-ups with the federal government with nonprofits being the most successful underdog in those cases. Of the 29 cases in which a nonprofit organization faced the federal government, nonprofits won 34.48%. This was also the most common litigant match-up of nonprofits v. the federal government, with businesses v. the federal government as the second most frequent, followed by individuals v. the government. Nonprofits were the most frequent petitioners (n=33), then businesses (n=30), and finally individuals (n=19).
Table 4: Underdog Success in Clean Air Act Cases by Litigant Type
(n=Number of Matchups Between Litigant Types)

<table>
<thead>
<tr>
<th>Petitioner</th>
<th>Respondent</th>
<th>Individual</th>
<th>Nonprofit</th>
<th>Business</th>
<th>State and Local Government</th>
<th>Federal Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>...</td>
<td>...</td>
<td>100%</td>
<td>...</td>
<td>11.11% (n=1)</td>
<td>11.11% (n=18)</td>
</tr>
<tr>
<td>Nonprofit</td>
<td>100%</td>
<td>...</td>
<td>0%</td>
<td>0%</td>
<td>34.48% (n=2)</td>
<td>34.48% (n=29)</td>
</tr>
<tr>
<td>Business</td>
<td>50%</td>
<td>100%</td>
<td>...</td>
<td>0%</td>
<td>23.08% (n=2)</td>
<td>23.08% (n=26)</td>
</tr>
<tr>
<td>State and Local Government</td>
<td>...</td>
<td>0%</td>
<td>66.67%</td>
<td>...</td>
<td>25.00% (n=3)</td>
<td>25.00% (n=8)</td>
</tr>
<tr>
<td>Federal Government</td>
<td>100%</td>
<td>...</td>
<td>33.33%</td>
<td>100%</td>
<td>...</td>
<td>100% (n=3)</td>
</tr>
</tbody>
</table>

Looking at the legal characteristics, the most cases were brought under §7401 on congressional findings and declaration of purpose (n=28). One of the critical parts of this provision is section a(3) which states “air pollution control at is source is the primary responsibility of States and local governments.” Another important clause is subchapter b(1–4) which declares the purpose of the statute’s air quality and emissions limitations. Litigants who disagree with how a state is addressing air pollution control within its borders may choose to pursue a case under this section and subchapters. Upperdogs prevailed in 19 of the cases in which §7401 was cited with the federal government winning 18 of those.

§7607b1, standards on motor vehicles or new engines, was also cited in 28 cases. Since the 1970 Amendments targeted motor vehicle emissions, businesses have heavily litigated this provision and the case sample reflects that. Upperdogs,
specifically the federal government, won 19 of these cases. Four of the times this provision was cited, nonprofit litigants won. The least successful litigants were individuals and state/local governments, winning only one case each with §7607b1 cited.

The third most cited provision is §7409, which addresses National Primary and Secondary Ambient Air Quality Standards (NAAQS). The EPA Administrator is required to review the NAAQS on a regular basis and publish proposed regulations revising these standards based on the best available science. Underdog litigants challenged the agency in each of these areas, often frustrated with the agency’s delay in revising the standards and strongly disagreeing with the agency on both the standards set and science used. For example, during the G. W. Bush administration, the EPA stalled on revising primary and secondary NAAQS for ozone and then set levels that conflicted with recommendations of the Advisory Committee. This led to litigants pursuing relief through the D.C. Circuit and a series of delays that continued into the Obama administration and were only recently resolved in 2013. Of the 16 times the provision was cited, upperdogs won 11 cases and the federal government prevailed in ten instances.

§7410 was cited in 16 cases and upperdogs won 11. The federal government prevailed in ten. §7410 specifies State Implementation Plans for National Primary and Secondary Ambient Air Quality Standards. The most common match-ups where this provision was cited were nonprofits challenging the EPA and being wholly unsuccessful against the agency. SIPS are federally enforceable, but also EPA-
approved, meaning any underdogs challenging the plans have to overcome both the state and federal government. Not only are the underdogs challenging the federal standards that serve as the baseline for the SIPS, but they are also disputing any additional standards the state has included. This poses a tremendous hurdle that underdogs were not able to overcome in this sample.

The next most commonly cited provision was §7607b describing judicial review and explaining how a petition for judicial review may be filed in the United States Court of Appeals for the District of Columbia if “such action is based on a determination of nationwide scope or effect” or in the appropriate circuit if it “local or regionally applicable.” Thirty-two percent (n=32) of the Clean Air Act cases were from this circuit, followed by 20% (n=20) in the Ninth Circuit, and 11% (n=11) in the Sixth Circuit. Upperdogs won seven of the 12 cases in which this provision was cited.

The final three provisions, §7607d9a, §7661c, and §7661d, each appeared in ten cases with upperdogs winning nearly every instance. §7607d9a states “In the case of review of any action of the Administrator to which this subsection applies, the court may reverse such action found to be—a) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” While this provision does allow judicial review of agency decisions, it also references similar language to that of Chevron and agency deference. The provision sets a very high burden for underdog litigants to overcome and considering so many cases were in the federal government’s backyard of the D.C. Circuit (n=32), proved to be a very unsuccessful one for underdogs.
Under Title IV of the CAA, §7661c states, “A single permit may be issued for a facility with multiple sources” with §7661d explaining the submission and approval process. These permits have been one of the most contested parts of the statute and heavily criticized by the industries required to operate with them. The challenge with this particular part of the statute is its reliance on the states for primary enforcement of the permits that includes inspections and fines. Feeling the EPA looks past states failing to fulfill these obligations, environmental groups have adopted the strategy of suing the state or regional air boards in charge (Collins 2010). Both of the administrations covered in this dataset put forth half-hearted efforts to enforce these provisions, but ultimately were unsuccessful and in the case of President Bush, even relaxed some of the permitting conditions. These provisions were not statistically significant in the final model, but they are important to understanding the types of cases litigated at the Court of Appeals in air pollution.

In describing the cases of this dataset, the breakdown of cases by circuit is important although the circuits were not statistically significant. Compared to other statutes where cases were more evenly distributed, the Clean Air Act cases were primarily in the D.C. Circuit (n=32), Ninth Circuit (n=20), and the Sixth Circuit (n=11). The large number of cases heard by the D.C. Circuit is less surprising in this statute because of the jurisdiction under §7607b of the CAA. However, this circuit is considered the most favorable to the federal government and agencies and while they were the most frequent respondents, they were also the smallest category of
petitioners. Underdogs were the least successful in this circuit. Table 5 below illustrates litigant success by circuit.

**Table 5: Litigant Success in Clean Air Act Cases by Litigant Type and Circuit**

*(Number of Cases Won)*

<table>
<thead>
<tr>
<th>Circuit</th>
<th>Individual</th>
<th>Nonprofit</th>
<th>Business</th>
<th>State and Local</th>
<th>Federal Government</th>
<th>Federal Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>6</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>D.C.</td>
<td>0</td>
<td>6</td>
<td>4</td>
<td>0</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Federal</td>
<td>…</td>
<td>…</td>
<td>…</td>
<td>…</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6 (6%)</strong></td>
<td><strong>10 (10%)</strong></td>
<td><strong>11 (11%)</strong></td>
<td><strong>10 (10%)</strong></td>
<td><strong>63 (63%)</strong></td>
<td></td>
</tr>
</tbody>
</table>
The Ninth Circuit is unsurprising because this is anecdotally considered the most pro-environmental circuit and nonprofit litigants, who were the most frequent petitioners, are thought to have the greatest chance of success in this circuit. In this sample, however, the Ninth Circuit was one of the least favorable to underdogs and nonprofits only won three of twenty cases in it.

The Sixth Circuit was one of the most successful circuits for the federal government as it won eight of its 63 cases here. It includes Kentucky, Michigan, Ohio, and Tennessee. Michigan produces the most automobiles in the country and Ohio, Kentucky, and Tennessee all have large numbers of factories within their borders. The CAA’s provisions targeting both air emissions from industrial sources and mobile emissions make it a very salient statute for litigants in these states. This was a very unsuccessful circuit for businesses and nonprofits, though, and underdogs only won three cases in it. (See Table 5 for litigant success by circuit).

Lastly, the two ideological measures for the Clean Air Act are panel ideology and ideological distance. Twenty-percent of the cases (n=20) have no judges appointed by a Democrat president, 39% (n=39) have one Democrat-appointed judge, and 32% of the panels are majority-Democrat. The JCS scores for the panels ranged from −0.543 to 0.581 and leaned conservative with an average of 0.058755. At the circuit level, the average ideological distance between a panel and circuit was 0.11456 and the scores ranged from −0.808 to 1.045. This is the widest margin of any statute in this dataset.
Table 6 illustrates the logit model of underdog success. The only variables reaching statistical significance are respondent type and whether the respondent won the case, both of which had a negative relationship to underdog success. For respondent type, the more resources the respondent had, the less likely the underdog was to win, supporting the litigant resource theory. The variable with the largest effect on underdog success was whether the respondent won the case. These findings will be discussed in greater depth shortly. Table 1 also compares the final model with one in which ideological distance is removed. The notable difference is the significance of panel ideology in the model without ideological distance and its negative relationship with underdog success. Because the model with ideological distance is a better-specified model, it is the focus of the analysis below.

Table 6: Logit Model of Underdog Success by Federal Circuits for CAA Cases

<table>
<thead>
<tr>
<th>Circuit</th>
<th>Model without Litigant included</th>
<th>Final Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>LR Chi-2</td>
<td>97.16</td>
<td>97.16</td>
</tr>
<tr>
<td>Pseudo R2</td>
<td>0.8211</td>
<td>0.8211</td>
</tr>
<tr>
<td>Circuit 1</td>
<td>−0.2630 (1.000)</td>
<td>−0.2630303 (1.000)</td>
</tr>
<tr>
<td>Circuit 2</td>
<td>−11.8134 (0.998)</td>
<td>−11.81348 (0.998)</td>
</tr>
<tr>
<td>Circuit 3</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>Circuit 4</td>
<td>3.2099 (0.999)</td>
<td>3.209928 (0.999)</td>
</tr>
<tr>
<td>Circuit 5</td>
<td>−5.2317 (0.999)</td>
<td>−5.231778 (0.999)</td>
</tr>
<tr>
<td>Circuit 6</td>
<td>5.8713 (0.999)</td>
<td>5.871339 (0.999)</td>
</tr>
<tr>
<td>Circuit 7</td>
<td>9.8148 (0.998)</td>
<td>9.814858 (0.998)</td>
</tr>
<tr>
<td>Circuit 8</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>Circuit 9</td>
<td>−7.6580 (0.998)</td>
<td>−7.658014 (0.998)</td>
</tr>
<tr>
<td>Circuit 10</td>
<td>…</td>
<td>…</td>
</tr>
</tbody>
</table>
Conclusions for each hypothesis will now be discussed.
**Hypothesis 1.** I expect upperdogs to remain the most successful litigants in the CAA with the federal government remaining the most effective litigant type.

This hypothesis is supported by the data. Upperdogs won 71% of the CAA cases in this dataset. The federal government was the most successful litigant type, winning 63% of the cases (n=63), followed by businesses (11%, n=11). The EPA specifically won 60 of the cases (60%). In addition to the federal government having the most resources and is afforded deference under the APA and Chevron, this litigant type’s success may also be due to the case provisions appearing most often in the dataset. The most frequent case provision cited (n=28) was §7401 specifying congressional findings and declaration of purpose, which is a general section of the statute and one in which the court would be able to defer to the agency’s perspective under the *Chevron* two-step. Of the 28 times this provision was cited, the upperdog won 19 with the federal government winning 18 of those. Dominance of the federal government specifically was consistent across every case provision in the final model.

**Hypothesis 2.** I expect litigant types to be negatively correlated with underdog success. As the opposing litigant has more resources, using the litigant typology as a proxy, the underdog will be less likely to win.

As shown in Table 6, respondent type was statistically significant for this statute and in the direction expected. As the respondent had more resources, underdogs were less likely to win. 81 of the 100 cases in the sample involved the federal government as respondent.
Petitioner type was not statistically significant. This may be due to the fact that a large number of petitioners were nonprofits (n=33) or businesses (n=30), which had limited success under this statute, winning 10% (n=10) and 11% (n=11) respectively. This hypothesis is therefore partially supported with respect to the Clean Air Act.

**Hypothesis 3.** The presence of a female judge on the panel will be positively correlated with the liberal outcome of underdog success.

Gender was not a statistically significant variable. Just over half of the panels had at least one woman on the panel, though, reflecting increased gender diversity on the appellate courts. This data does not support this hypothesis.

Figure 2 shows the predicted probability of underdog success from the logit model when a woman or minority justice was on the panel. If there are no women or minorities on the panel, the underdog has a 0.001 probability of winning. Substantively, the presence of a woman on the panel changes the probability only slightly (0.004), and when there is a minority on the panel, the probability of underdog success is 0.003. When there is a woman *and* a minority on the panel, the probability of underdog success is 0.013.
Hypothesis 4. Underdogs will be more successful when bringing a case under the citizen suit provision (§7604).

This hypothesis was not tested in the final model because only six cases were brought under the citizen suit provision and each characteristic had to be cited ten or more times to be included.

Hypothesis 5. I expect underdogs to be less likely to win when Chevron is cited in the majority opinion.

With Chevron not statistically significant in this model, there is not enough data to support this hypothesis. One possible explanation for this result is that litigants brought a number of cases under the ‘arbitrary and capricious’ provisions of the CAA.
or APA and when writing opinions, judges could refer to the statutory language instead of the *Chevron* precedent. *Chevron* was cited in 39 cases with upperdogs winning 27 of those and the federal government alone winning 26. Although not a statistically significant variable for underdog success, *Chevron* citation was part of the federal government’s success in CAA cases.

**Hypothesis 6.** I expect amicus briefs to be statistically significant in favor of underdogs.

As described in Chapter 2, the purpose of this hypothesis is to test Collins (2010) findings on how amicus briefs can help less advantaged litigants. Amicus briefs are an explanatory variable and the data does not support this hypothesis. Amicus briefs were not significant in the final CAA model (p<0.074). A more precise measure of briefs to include how many were cited in support of each party would enable better analysis of how the briefs helped or hurt underdogs depending on whether they were the petitioner or respondent, but this data was not available at the time.

**Hypothesis 7.** I expect underdogs to be unsuccessful when the respondent wins.

Consistent with prior literature summarized in Chapter 2, and using this original dataset, the hypothesis is supported. It was the strongest predictor for upperdog success. When the respondent won, underdogs were highly unlikely to win. This is likely due to the federal government appearing as the respondent 81% (n=81)
of the time in the CAA. With the cooperative federalism structure of the CAA that delegates responsibilities both to the states and federal government, and fact that the SIPs are federally enforceable, this result is not surprising. If the respondent variable is removed, as shown in Table 6, the explanatory strength of the model notably declines.

The results of this analysis speak to the theory that litigant resources matter for success in the courts. In the final model, none of the case characteristics were significant and neither of the ideology variables explained underdog success or failure. The role of ideology at the Court of Appeals has varied depending on the issue area and for this environmental issue area, a judge’s ideology using the JCS scores, does not explain judicial outcomes.

Conclusion

This chapter offers mixed findings for underdog litigants. Litigant resources still matter and upperdogs remain likely to prevail, particularly if the federal government is a party to the case. Although *Chevron* was not statistically significant, this opinion may have created a culture of agency deference, represented by the high success rate of the EPA. Underdog litigants will always face challenges when opposing a federal actor. However, underdogs are able to win when certain legal provisions of the CAA are cited in the case. This may mean the court is more willing to rule in favor of the underdog litigant for certain types of cases. It suggests if litigants strategically select which cases they choose to put their limited resources towards, it may lead to greater
success in the courts. A larger sample may yield to statistically significant relationships between statutory provisions and underdog success than what this analysis bore out.

As one of the foundational statutes from the Environmental Decade, the Clean Air Act has an important position in environmental law history. It was the first statute the EPA was tasked with enforcing and served as the blueprint for many other statutes. The CAA establishes a federal role in both monitoring and improving air pollution, but delegates enforcement to the states, making it very difficult for underdog litigants to successfully prevail in either forum as one level. Nonprofits and businesses were petitioners in 63% of the cases, yet the federal government wins 62% of the time. Even pursuing cases in traditionally environmental-friendly circuits, underdogs were unable to prevail that often. These results speak to the strong deference afforded to the federal government in environmental law and to the importance of resources.

For underdog litigants evaluating legal strategies, these findings suggest that pursuing scientific provisions such as the NAAQS is more likely to lead to success than challenging the agency on issues of discretion or EPA-approved SIPS. Since passage of the CAA, the EPA has been tasked with enforcement and monitoring of several major statutes. It is overburdened and consistently behind with required revisions for the NAAQS. In addition to arguing new science has emerged justifying revisions, underdogs can reasonably and successfully take the agency to court for these administrative failures.
In the future, air pollution will remain a high-profile issue as the Obama administration plans to enact sweeping climate change reform with additional regulations on power plants, and as a new EPA administrator is appointed. President Obama’s current nominee, Gina McCarthy, is the acting Assistant Administrator for Air Quality with a history of compromising with industries and businesses on air pollution regulation, but her nomination has been met with strong political congressional opposition. The resolution of this appointment will have important implications both for how the EPA addresses air pollution moving forward and for the direction environmental policy and legislation in this area will take.

The findings in this chapter provide an initial look at how litigants succeed in air pollution control cases and the unique challenges the CAA poses for underdogs. It offers promising results for underdogs, but also speaks to the continued dominance of the federal government and upperdogs in the appellate courts. With the policy and administrative changes proposed by the Obama administration, this will be a constantly evolving policy area and therefore a busy one for the courts. The next chapter on the Clean Water Act will look at another environmental policy area facing enforcement challenges and calls for reform.
CHAPTER 5
CLEAN WATER ACT

Introduction

With over 3.5 million miles of rivers and streams, 58,421 miles of ocean shoreline, 5,559 miles of Great Lakes shoreline alone, and only 22% of these water bodies partially supporting their intended use, the Clean Water Act (CWA) is intended to cover large environments which are rapidly deteriorating (Ferrey 2010). Its goals to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters” reflect the statute’s comprehensive approach to improve water quality in the United States (Murphy 2013). This broad mandate involves a large number of cases at the Court of Appeals and a diversity of litigants making it well-suited for quantitative analysis.

In this chapter I examine cases involving the CWA at the Court of Appeals. I focus on the relationship between judicial behavior and litigant resources, specifically how to best explain underdog success in this policy area. Using variables and key concepts from Chapter 2, I test whether the legal model or litigant resources best explains judicial decision-making. (See Appendix A). Similar to the Clean Air Act, the CWA involves more underdogs such as nonprofits and individuals and provides an analysis of how the least-advantaged underdogs can prevail at the Court of Appeals.
Legislative Background

The federal CWA we know today has its origin in the Rivers and Harbors Act of 1899, referred to as the Refuse Act. Originally intended as a law to protect U.S. waters from interference with navigation, it is the oldest environmental statute and the first to regulate discharges into waterways (Downing, Winer, Wood 2003; Ferrey 2010). The Refuse Act created two permit systems for discharges that were later incorporated into the CWA. The next legal attempt at improving water quality in the United States occurred in 1948 through the Federal Water Pollution Control Act (FWPCA). Water quality standards (WQS), now a key component of water law, were first set under this statute, but initially only targeted publicly owned treatment works (POTWs) or sewage treatment facilities. It would take several more years and heightened congressional frustration at states’ failure to improve their waters before WQS would be tied to funding and accompanied by technology-based effluent standards (Malloy 2011).

The CWA’s goals differ from those of previous statutes, focusing instead on restoring waterways to the fishable and swimmable quality by 1983 and eliminating pollutant discharges by 1985. The pollutant levels for waterways based on their designated use(s) are set by the states under the EPA’s guidance and based on the best available scientific information. A series of amendments later extended the original target dates and further defined the Act’s standards for what constituted a “discharge,” “navigable waters,” and “waters of the United States” (Ferrey 2010). Distinctions between effluent limitations for direct sources, new sources, and POTWs
and differing timelines for standards were also refined (Crawford 2010). Similar to the CAA, deadlines for reducing the pollutants are staggered over time and vary depending on the source type. The importance of these amendments and deadlines is the additional discretion afforded to the EPA in establishing and interpreting standards. This mandated deference, in addition to *Chevron* and the Administrative Procedures Act (APA), make it difficult for any litigant to successfully challenge an EPA rule or interpretation. However, if the EPA fails to follow its duty to establish standards, litigants have an opportunity to challenge the agency and demand enforcement action.

From its inception, the CWA has been based on the principle of cooperative federalism in which implementation and enforcement tasks are divided between the federal government and states. States have the primary responsibility for setting WQS through Total Maximum Daily Loads (TMDLs), but if they fail to do so, the federal government is required to set them. WQS establish the discharge limits for the individual permits, which are the basis of litigation under this statute (Molloy 2011).

Another core element of the permits and litigation is the source of pollution: nonpoint or point. Nonpoint source pollution is not regulated by the CWA and left to the states to address. In contrast, the CWA heavily regulates point sources, defined as “any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants may be discharged” (§402). Congress did not further specify what it meant
by point sources and subsequent cases in the lower courts have had to do this in addition to clarifying the difference between a point and nonpoint source. *U.S. v. Plaza Health Laboratories* (1993) held that individuals could not be classified a “point source” and that the statute’s criminal sanctions were not intended for human polluters. *Pronsolino v. Nastri* (2002) upheld the EPA’s determination that applied TMDLs to both point and nonpoint sources under §303d of the CWA.

While nonpoint sources account for half of all water pollution and pose a major threat to water quality, their regulation falls to the states. Section 319 requires states to identify water bodies unable to meet the WQS because of nonpoint source pollution and develop management plans which include “best management practices and measures, an implementation plan, and deadlines,” subject to EPA approval (Ferrey 2010). The EPA has also tried to manage nonpoint source pollution through TMDLs, but the statute’s failure to specifically regulate this kind of pollution is one of the biggest criticisms of the CWA and one of the greatest hurdles to the statute achieving its goals (Murphy 2013).

Stormwater and runoff are additional types of challenging pollution to regulate. §405 requires permits for stormwater discharge defined as “stormwater runoff, snow melt runoff, and surface runoff and drainage” (40 C.F.R. 122.26(b)(13)). From 1994 on, permits have been required for discharges of stormwater from most municipal storm water sewer systems. Industrial facilities such as hazardous waste treatment plants, storage or disposal facilities, landfills, junkyards, battery reclaimers, and sewage treatment works are a few of the types of places subject to these
stormwater permit requirements. For a majority of the time this data covers, EPA regulations requiring permits for Concentrated Animal Feeding Operations (CAFOs) were in operation. These permits required a CAFO to apply for a permit if it intended to discharge and to include a nutrient management plan for the phosphorus and nitrogen runoff. *Waterkeeper Alliance v. EPA (2005)* struck down parts of this rule and modified permit and reporting requirements for CAFOs and the last few years of the dataset reflects this change in policy. States also have jurisdiction to regulate stormwater discharges and CAFOs, but the financial and political costs make it very unpopular and therefore unlikely for elected officials to pursue.

In addition to enforcement provisions for the CWA being similar to the CAA, §505 of the CWA permits citizen suits. In writing this statute, Congress purposely went beyond the public participation procedures of the APA and emphasized citizen participation in the CWA through suits, enforcement, administrative penalty actions, and public hearings. Though not permitted under the APA, attorney and expert witness fees were made available for citizen suits under the CWA (Craig 2009). As in other statutes in this dataset, a citizen is defined as “a person who has an interest that is adversely affected, or that may be adversely affected” by the standing case *Sierra Club v. Morton* (1972). States are also allowed to challenge an EPA administrator if the state feels the agency has failed to enforce an existing rule, if the agency has failed to take action, or if the state feels its interests have been harmed because of EPA inaction. From 1970–2003, an estimated 2000 environmental citizen suits were filed with 1500 reported court decisions and most were CWA cases. Since 1995,
citizen suits are responsible for 315 “compliance-forcing judicial consent orders” under the CWA and CAA combined and more CWA citizen suits are filed every year than for any other federal environmental statute (Craig 2009). Citizen suits are part of both RCRA and the CAA, but they have a historically important role in enforcing water pollution regulations under the CWA.

The last important provision to discuss is §507. This section contains a “whistleblower” provision allowing individuals to challenge a federal agency or business that also attempts to protect them from retaliation. It provides underdogs with another legal avenue to pursue environmental protection while also protecting them from retaliation by the upperdogs (Ferrey 2010). Though this provision was not cited enough to be used in the final model, it is an important one for understanding all of the options underdogs have under the CWA.

**Theoretical Relationships and Concepts (See Appendix A)**

The first theoretical relationship I test is the legal model that argues case characteristics and legal precedents best explain judicial outcomes. The CWA is a lengthy statute as written and with 244 cases for this research it was the largest in the dataset. Consistent with the other four statutes in this research, I include every case characteristic appearing ten or more times in the model. For the Clean Water Act, the following provisions are incorporated: §1251 (research and related programs, declaration of goals and policy), §1251a (objectives), §1291 (sewage collection systems), §1311 (effluent limitations), §1311a (discharge of pollutants), §1311b
(objectives for effluent limitations), §1312 (water quality related effluent limitations), §1313 (water quality standards and implementation plans), §1313c (governor’s role in public hearings to review water quality standards), §1313d (state identification of waters in need of new effluent standards), §1314 (information and guidelines), §1316 (National Standards of Performance), §1317 (toxic and pretreatment effluent standards), §1318 (inspections, monitoring, and entry), §1319 (federal enforcement), §1319a (Administrator authority to issue compliance orders), §1319b (Administrator authority to start civil action), §1319c (criminal penalties), §1319d (civil penalties), §1319g (administrative penalties), §1328 (aquaculture), §1341 (certification), §1341a (requirements for permit applicants), §1342 (National Pollutant Discharge Elimination System), §1342a (Administrator authority for permits to discharge pollutants), §1342b (Governor authority to administer state permit system), §1342c (Administrator to suspend state program), §1342p (municipal and stormwater discharge), §1344 (permits for dredged or fill materials), §1344a (Secretary authority to issue permits for discharges into navigable waters), §1344f (explanation of discharge of dredge and fill materials), §1345 (disposal of sewage sludge), §1362 (general definitions), §1365 (citizen suits), §1365a (citizen standing to commence civil action), §1365b (restrictions on citizen suits), and §1369b (administrative procedure and judicial review). Lastly, Chevron is included to test the explanatory power of case precedents in the legal model and this is measured by whether or not the case was cited in the majority opinion.
Two variables to control for the influence of ideology and strategic behavior are included: panel ideology and ideological distance. I measure these variables using the Judicial Common Space (JCS) scores as developed by Epstein et al. (2007) and Poole and Rosenthal (1997). JCS scores measure the ideal policy points of Supreme Court justices with comparable measures for appellate and trial court judges. This enables comparison across multiple court levels and allows me to include panels that have district court judges sitting by designation. Panel ideology is measured using the median justice’s JCS score from the deciding panel. For the ideological distance variable, I subtract the median JCS score on the panel from the median JCS score of the circuit the year the case was decided.

To examine the explanatory power of litigant resources, I include petitioner and respondent type (using the Songer typology) and respondent success (dichotomous variable for whether the respondent won). Presence of a minority on the panel (dichotomous variable), presence of a woman (dichotomous variable), dichotomous variables for each circuit, and amicus brief (dichotomous variable for whether a brief was submitted in support of either the petitioner or respondent) are control variables for the final model. All of the variables are put into one model for testing. This allows the variables to directly compete to explain outcomes in a multivariate setting. A single model is therefore a more stringent test for the theories than two separate models would be.
Data, Methods, and Hypotheses

I collected and analyzed the data quantitatively due to the number of cases and variables to be included in the models. With a dichotomous categorical dependent variable measuring whether or not the underdog won the case (0=underdog loss, 1=underdog win), I use a logit model in STATA. This MLE regression technique is used because the dependent variable of underdog success can only have two predefined values (Halcoussis 2005). Logit produces a model estimate that can be used to calculate the probability of underdogs winning, given the values of the predictor variables described below (Baum 2006).

I acquired data from LexisNexis and Westlaw for cases decided between 1993–2008, covering the Clinton and W. Bush presidential administrations. My initial search used the term “Clean Water Act” in LexisNexis with a second search in Westlaw to ensure the universe of available cases had been considered and no cases were missed. There were also no major revisions during this time period to the CWA, making the cases during the time period comparable for a quantitative analysis.

Searches in LexisNexis and Westlaw produced a large number of cases that did not meet the following coding criteria. I read each case and excluded it if the opinion did not decide a statutory issue on the merits, if the petition is denied, remanded, or granted in part, or if the case only has a citation to the statute. A number of cases did have split verdicts in which the court would uphold part of the district court opinion and remand or deny other claims. I was unable to determine the upperdog or underdog “winner” in these situations, and therefore the cases were
excluded. The number of variables varied by statute and the only limitation I considered prior to starting the coding process was using a slightly abbreviated list of statutory provisions as noted in Percival (2011) and Appendix B. The CWA dataset included 230 variables and 266 observations. The final original dataset for this statute contains 244 cases.

**Hypotheses**

1. I expect upperdogs to remain the most successful litigants in the CWA with the federal government remaining the most effective litigant type.

2. I expect litigant types to be negatively correlated with underdog success. As the opposing litigant has more resources, using the litigant typology as a proxy, the underdog will be less likely to win.

3. The presence of a female judge on the panel will be positively correlated with the liberal outcome of underdog success.

4. Underdogs will be more successful when bringing a case under the citizen suit provision (§1365 or 1365a).

5. I expect underdogs to be less likely to win when *Chevron* is cited in the majority opinion.

6. I expect amicus briefs to be statistically significant in favor of underdogs.

7. I expect underdogs to be unsuccessful when the respondent wins.
Results
The dataset for the CWA includes a total of 266 cases with the majority decided in 2003 (n=27 or 10.15%) and 1993 (n=22, 8.27%). Approximately 85% (n=225) of the cases were published which is an unusually high percentage and as discussed in Chapter One, may bias the conclusions of this analysis. *Chevron* was cited in 47 cases (17.67% of CWA cases), as compared to 24 cases (15.29%) in RCRA or 39 citations (n=29%) in the CAA. Almost one-quarter of the CWA cases (n=63) had one or more amicus briefs submitted. Half of the CWA cases had one or more women on the panel (n=131) and 33% had one or more minority justices on the panel (n=85). The EPA was a party to 74 cases and won 58 (78%) of them. 41.63% (n=107) of the panels had only one Democrat-appointed justice on the panel, 69 (26.85%) had two Democrat-appointed justices, and 32 panels (12.45%) were comprised of all Democrat-appointed justices.

The most successful litigant was the federal government, winning 55.64% of cases (n=148), and the least successful was the individual litigant, winning only 17 cases (6.39%). The federal government was the most frequent respondent (n=164, 61.65%) and the least frequent petitioner (n=23, 8.65%). As with other statutes, the CWA authorizes the EPA to make a number of decisions and places the agency at the center of disagreement with other litigant types. Table 7 below illustrates the frequency with which each litigant type faced the others and the percentage of underdog success.
Table 7: Percentage of Underdog Success in CWA Cases
(n=Number of Match-ups Between Litigant Types)

<table>
<thead>
<tr>
<th>Petitioner</th>
<th>Individual</th>
<th>Nonprofit</th>
<th>Business</th>
<th>State and Local Government</th>
<th>Federal Government</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Respondent</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td>0%</td>
<td></td>
<td>15.38%</td>
<td>16.36%</td>
<td></td>
</tr>
<tr>
<td>(n=3)</td>
<td>(n=13)</td>
<td>(n=55)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonprofit</td>
<td>42.11%</td>
<td>40.00%</td>
<td>34.15%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n=19)</td>
<td>(n=15)</td>
<td>(n=41)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>100%</td>
<td>63.64%</td>
<td>50.00%</td>
<td>15.09%</td>
<td></td>
</tr>
<tr>
<td>(n=2)</td>
<td>(n=11)</td>
<td>(n=2)</td>
<td>(n=53)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>State and Local Government</td>
<td>50.00%</td>
<td>75.00%</td>
<td>66.67%</td>
<td>7.14%</td>
<td></td>
</tr>
<tr>
<td>(n=4)</td>
<td>(n=4)</td>
<td>(n=6)</td>
<td>(n=14)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal Government</td>
<td>11.11%</td>
<td>50.00%</td>
<td>16.67%</td>
<td>0.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>(n=9)</td>
<td>(n=6)</td>
<td>(n=6)</td>
<td>(n=1)</td>
<td>(n=1)</td>
<td></td>
</tr>
</tbody>
</table>

One of the more surprising results was the success of nonprofit litigants in this statute. Using the litigant typology as a proxy for resources, nonprofits are one of the least-advantaged litigants and almost always outmatched by resources of upperdogs in court. However, nonprofits won 39 cases (14.66%) and they were the most frequent petitioner (n=75, 28.20%). They were also the second-most winning litigant type. This finding is consistent with what the earlier literature by Craig (2009) argues is the intent of language in the statute encouraging public participation. It is easier to formalize participation through interest or nonprofit groups and though they did not always file under the citizen suit provision, litigants in this category did actively pursue a number of cases.

This result may also be explained by the specific nonprofit organizations involved in these water pollution cases and the policy priorities they have. Larger nonprofits such as the Natural Resource Defense Council (NRDC), Sierra Club, and
Defenders of Wildlife were involved as organizations with water quality as one of their top policy priorities. A number of location or water body-specific organizations litigated this statute as well. Some groups such as Highway J Citizens Group or Friends of Pinto Creek focus on specific geographic areas and concentrate their limited resources on cases directly impacting their members. This focused litigation may have helped improve claims to standing which can be a big legal hurdle for less-advantaged litigants. Nonprofit litigants were most successful in the Ninth Circuit, winning 18 of their 39 cases there. This circuit is considered to be the most environmental-friendly, particularly for water law cases, and it proved to be favorable to this litigant type. It was also the most favorable circuit for the federal government and businesses, however.

For this statute, there were fewer cases litigated in the D.C. Circuit. Only 12 of the 266 cases were decided in this circuit and this is unusual because of the federal government’s extensive involvement in the statute. This may reflect decisions by individuals and nonprofits, the two most common petitioner types, to choose other circuits than D.C. believing they would have greater chances of winning outside the federal government’s home turf. Table 8 below illustrates litigant success by type and circuit. The CWA also does not have a comparable provision to the CAA calling for cases to be sent to the D.C. Circuit and this may explain the difference between the two statutes with that circuit. Additional research into forum shopping is needed to better analyze this finding.
Table 8: Litigant Success By Circuit for CWA cases (Number of Cases Won)

<table>
<thead>
<tr>
<th>Circuit</th>
<th>Individual</th>
<th>Nonprofit</th>
<th>Business</th>
<th>State and Local Government</th>
<th>Federal Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>4</td>
<td>7</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>20</td>
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<tr>
<td>5</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>8</td>
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<tr>
<td>6</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>8</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>2</td>
<td>18</td>
<td>5</td>
<td>8</td>
<td>25</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>11</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>D.C.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Federal</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>17 (6.39%)</td>
<td>39 (14.66%)</td>
<td>35 (13.16%)</td>
<td>27 (10.15%)</td>
<td>148 (55.64%)</td>
</tr>
</tbody>
</table>

With 35 legal provisions being cited ten or more times, this model was the largest of my research. The three provisions cited most often were §1362 (n=95), §1342 (n=73), and §1344 (n=63). The first, §1362, is the most frequently litigated because it defines critical terms of the statute such as “pollution,” “navigable waters,” “point source,” “toxic pollutant,” and “pollution,” all of which are strongly contested.
during the permit and TMDL processes. How the federal government and courts define these terms directly affects the regulations that must be followed and permit conditions. The federal government won 56 of the 95 cases in which this provision was cited. For businesses, defining these terms in their favor is a strong economic motivation to challenge the vague language in court. They won 15 of the 95 cases. Nonprofit litigants were almost as successful, prevailing in 14 cases.

§1342 puts forth the process for permits and the National pollutant discharge elimination system (NPDES), an essential component of the CWA. It is through this section that the statute relies on technology-based controls for implementation (Murphy 2013). Upperdogs won 51 of the 73 cases in which this provision was cited. The federal government won 33 of these while nonprofits won 14, businesses won 13, state and local governments won 10, and individuals won three.

§1344 addresses permits for the discharge of dredged or fill material into waters of the United States, including the controversial discharge into wetlands. These permits are reviewed by the Army Corps of Engineers. This was a very successful provision for the federal government who won 41 of the 63 cases in which §1344 was cited. Upperdogs prevailed in 52 of the 63 cases. A more detailed content analysis is necessary to determine if this is due to the court upholding the federal government’s decision granting permits the discharge or if the government was limiting such discharges.

In the final model, the statistically significant variables presented in Table 9 were §1344a and litigant (whether the respondent won). Table 9 below notes the final
model used for this analysis and compares it to one in which litigant is removed. When litigant is removed, respondent type becomes significant in the expected direction reducing the likelihood of underdog success and §1313c is also significant in favor of upperdog success. However, since the log likelihood indicates that the model with litigant included (127.10) is more fully specified than the model without that variable (74.45), the more fully specified model is reported and analyzed.

Table 9: Logit Model of Underdog Success for CWA Cases

<table>
<thead>
<tr>
<th></th>
<th>Model without Litigant included</th>
<th>Final Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>LR Chi-2</td>
<td>74.45</td>
<td>127.10</td>
</tr>
<tr>
<td>Pseudo R2</td>
<td>0.2626</td>
<td>0.4482</td>
</tr>
<tr>
<td>Circuit 1</td>
<td>14.12985 (0.993)</td>
<td>12.24671 (0.995)</td>
</tr>
<tr>
<td>Circuit 2</td>
<td>15.01242 (0.993)</td>
<td>13.7358 (0.994)</td>
</tr>
<tr>
<td>Circuit 3</td>
<td>15.90523 (0.992)</td>
<td>14.81321 (0.993)</td>
</tr>
<tr>
<td>Circuit 4</td>
<td>13.99688 (0.993)</td>
<td>10.87661 (0.995)</td>
</tr>
<tr>
<td>Circuit 5</td>
<td>14.00331 (0.993)</td>
<td>115962 (0.995)</td>
</tr>
<tr>
<td>Circuit 6</td>
<td>14.5184 (0.993)</td>
<td>12.5556 (0.994)</td>
</tr>
<tr>
<td>Circuit 7</td>
<td>14.05399 (0.993)</td>
<td>11.96452 (0.995)</td>
</tr>
<tr>
<td>Circuit 8</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>Circuit 9</td>
<td>15.05663 (0.993)</td>
<td>13.9699 (0.994)</td>
</tr>
<tr>
<td>Circuit 10</td>
<td>14.29972 (0.993)</td>
<td>11.63428 (0.995)</td>
</tr>
<tr>
<td>Circuit 11</td>
<td>14.744 (0.993)</td>
<td>12.27474 (0.995)</td>
</tr>
<tr>
<td>D.C. Circuit</td>
<td>15.43724 (0.992)</td>
<td>12.9129 (0.994)</td>
</tr>
<tr>
<td>Respondent type</td>
<td>−0.5032249 (0.012)**</td>
<td>−0.43777879 (0.79)</td>
</tr>
<tr>
<td>Petitioner type</td>
<td>−0.1335188 (0.528)</td>
<td>−0.3191015 (0.225)</td>
</tr>
<tr>
<td>Minority</td>
<td>0.2108788</td>
<td>0.5692723</td>
</tr>
<tr>
<td>judge</td>
<td>(0.622)</td>
<td>(0.276)</td>
</tr>
<tr>
<td>-------------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>Female judge</td>
<td>−0.5796888</td>
<td>−0.2752575</td>
</tr>
</tbody>
</table>

Table 9—Continued

<p>| Panel ideology | −0.8801111 | 2.340593 |
|               | (0.224)    | (0.270)  |
| Circuit ideology | 0.5098364 | …       |
|                | (0.755)    |         |
| Amicus        | 0.0362423  | −0.2662403 |
|               | (0.946)    | (0.676)  |
| Chevron       | 0.6658412  | 0.8590503 |
|               | (0.285)    | (0.297)  |
| 1251–1387     | −0.0018492 | −0.0006313 |
|               | (0.997)    | (0.999)  |
| 1251          | −0.1379891 | 0.5342963 |
|               | (0.857)    | (0.546)  |
| 1251a         | 0.0473571  | 0.0897352 |
|               | (0.938)    | (0.908)  |
| 1291          | −0.3712483 | −0.1974216 |
|               | (0.559)    | (0.802)  |
| 1311          | −1.358632  | −1.539699 |
|               | (0.077)    | (0.105)  |
| 1312          | −1.79571   | 0.1376556 |
|               | (0.367)    | (0.951)  |
| 1313c         | −3.044906  | −2.107342 |
|               | (0.049)*   | (0.255)  |
| 1313d         | 2.101749   | 2.588448 |
|               | (0.106)    | (0.127)  |
| 1314          | −1.841819  | −1.873168 |
|               | (0.225)    | (0.268)  |
| 1316          | 3.0453     | 3.478414 |
|               | (0.070)    | (0.075)  |
| 1317          | 1.491675   | 0.5907961 |
|               | (0.235)    | (0.40)   |
| 1318          | −2.766747  | −0.8269131 |
|               | (0.092)    | (0.663)  |
| 1319          | −0.9212268 | −1.403665 |
|               | (0.510)    | (0.329)  |
| 1319a         | −1.110236  | −2.307214 |
|               | (0.329)    | (0.178)  |
| 1319b         | 0.67935    | −0.531431 |
|               | (0.555)    | (0.765)  |
| 1319c         | −1.236771  | −1.388514 |
|               | (0.110)    | (0.112)  |
| 1319d         | 0.3242167  | 0.3229343 |
|               | (0.122)    | (0.798)  |
| 1319g         | 1.382087   | 1.890234 |
|               | (0.139)    | (0.125)  |
| 1328          | 0.4708289  | −2.776689 |
|               | (0.781)    | (0.237)  |
| 1341          | 0.1175335  | −0.8019779 |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.2680785 (0.610)</td>
<td>0.289747 (0.658)</td>
</tr>
<tr>
<td>1342</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 9—Continued

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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<td>1342a</td>
<td>0.1244989 (0.853)</td>
<td>0.1075555 (0.894)</td>
</tr>
<tr>
<td>1342b</td>
<td>0.445213 (0.509)</td>
<td>−0.0901845 (0.913)</td>
</tr>
<tr>
<td>1342c</td>
<td>0.1644659 (0.861)</td>
<td>1.045109 (0.348)</td>
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<tr>
<td>1342p</td>
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<td>−1.977279 (0.286)</td>
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<tr>
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</tr>
<tr>
<td>1344a</td>
<td>−2.089574 (0.036)</td>
<td>−2.391803 (0.040)*</td>
</tr>
<tr>
<td>1344f</td>
<td>−0.0798961 (0.948)</td>
<td>−0.1814606 (0.906)</td>
</tr>
<tr>
<td>1345</td>
<td>0.1216449 (0.912)</td>
<td>−1.142158 (0.446)</td>
</tr>
<tr>
<td>1362</td>
<td>0.5886378 (0.222)</td>
<td>0.3561593 (0.551)</td>
</tr>
<tr>
<td>1365</td>
<td>−0.5312379 (0.398)</td>
<td>−0.1546312 (0.830)</td>
</tr>
<tr>
<td>1365a</td>
<td>0.7854885 (0.187)</td>
<td>1.103199 (0.127)</td>
</tr>
<tr>
<td>1365b</td>
<td>−0.6628368 (0.382)</td>
<td>−0.9357869 (0.331)</td>
</tr>
<tr>
<td>Litigant</td>
<td>…</td>
<td>−3.602139 (0.000)** *</td>
</tr>
<tr>
<td>Published</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>Distance</td>
<td>…</td>
<td>2.140531 (0.996)</td>
</tr>
</tbody>
</table>

* p<0.05 **p<0.01 ***p<0.001

Looking at §1344a, this is the first sub-section under the dredge or fill permitting discussed earlier. It specifically addresses “discharge into navigable waters at specific disposal sites” and the Secretary’s authority to issue permits after the opportunity for public hearings. This would occur after the lengthy permitting process had already taken place. Underdog litigants are afforded a number of opportunities to challenge the EPA prior to the final permit issuance, making it difficult to
successfully oppose the final decision. The variable was significant at p<0.040 and predicted upperdog success who won 37 of the 42 cases in which this provision was cited. The federal government won 31 of the 42 cases suggesting the court deferred to the Secretary’s discretion and authority with permit decisions. Businesses were the second most successful litigants when this provision was cited, winning five cases. This provision helping upperdogs is consistent with the theory of agency deference and courts supporting discretionary decisions the agencies or federal government makes.

The other significant variable in this model is whether the respondent won. The federal government appeared as respondent 61.65% of the time, supporting the theory that litigants with the most resources will prevail and suggesting the court does defer to the federal government even if *Chevron* is not cited. Table 9 illustrates the difference in models when this variable is removed.

The main variable to control for ideology, panel ideology, was not significant and we cannot draw any meaningful conclusions about this hypothesis. The mean ideology score was 0.0640645 and it ranged from −0.4535 to 0.581 for Clean Water Act cases. This is very close to the mean ideology for the CAA (0.058755) and range of −0.543 to 0.581. The specific hypotheses for the CWA will now be discussed.

**Hypothesis 1.** I expect upperdogs to remain the most successful litigants in the CWA with the federal government remaining the most effective litigant type.
This hypothesis is supported by the data. Upperdogs won 72.56% of the cases (n=193) in the Clean Water Act, supporting this hypothesis and consistent with prior research on upperdog success in the court system. Additionally, the federal government was the most successful litigant type, winning 55.64% (n=148) of its cases with 130 of these cases as respondent.

**Hypothesis 2.** I expect litigant types to be negatively correlated with underdog success. As the opposing litigant has more resources, using the litigant typology as a proxy, the underdog will be less likely to win.

As shown in Table 9, this hypothesis is almost supported by the data for respondent type with underdog success declining as the opposing litigant has more resources (p<0.079). Petitioner type approached statistical significance (p<0.125), suggesting that as a litigant had more resources, underdogs were less likely to win. Neither of these variables were statistically significant at the p<0.05 level, though, so there is not enough support for this hypothesis.

**Hypothesis 3.** The presence of a female judge on the panel will be positively correlated with the liberal outcome of underdog success.

Gender was not statistically significant in the logit model shown by Table 9 and we cannot draw conclusions about this hypothesis. Figure 3 below illustrates the probabilities of underdog success when a woman or minority was on the panel. When there are no women or minorities on the panel, an underdog litigant’s probability of
success is 0.14. If there is a woman on the panel, there is a 0.10 probability of underdog success. Presence of a minority slightly increases an underdog’s probability of winning to 0.23 and if there is both a woman and minority on the panel, the probability of underdog success is 0.17. Upperdogs had a 0.80 or above probability of winning regardless of whether there was a woman or minority on the panel.

Hypothesis 4. Underdogs will be more successful when bringing a case under the citizen suit provision (§1365 or §1365a).

Suggesting support for this hypothesis in Table 9, §1365a is not statistically significant (p<0.127). Nonprofit litigants were the most successful type when this provision was cited, winning 18 of the 57 cases involving citizen suits under §1365a alone. The federal government won 14 of the cases, state and local governments won
11, businesses prevailed in 10, and individuals only won four cases. Citizen suits are covered by §1365(a-h) and when these are added, this section of the statute was cited 132 times. After §1365(a-h) are collapsed into a dichotomous variable, 73 CWA cases involved citizen suits. Since there was no statistical difference in the model with the citizen suit provisions combined, I used the more fully specified model with the provisions separated. Citizen suits are a valuable legal resource, particularly for underdog litigants, and this data suggests that they may be an important part of underdog success in water pollution cases.

**Hypothesis 5.** I expect underdogs to be less likely to win when *Chevron* is cited in the majority opinion.

The *Chevron* variable was not statistically significant so we cannot speak to its relationship to underdog success. As previously discussed, the lack of citation to this case may be due to the Administrative Procedure Act being cited instead. The APA was not coded separately at this time.

**Hypothesis 6.** I expect amicus briefs to be statistically significant in favor of underdogs.

Amicus briefs were not statistically significant in the model shown in Table 9. This could be due to the way in which it was measured as a dichotomous variable. A more precise measure of which briefs were submitted for which party might better illustrate the relationship between underdog success and the briefs. Data limitations
prevented such analysis at the time of research. Additionally, it may be the case that in light of greater nonprofit litigant participation in Clean Water Act cases, this litigant type is less likely to submit an amicus brief and more likely to pursue cases.

**Hypothesis 7.** I expect underdogs to be unsuccessful when the respondent wins.

This hypothesis is supported by the data with respondent success being one of the strongest predictors of upperdog success (p<0.000). Underdogs were highly unlikely to prevail when the respondent won. Considering the federal government was the respondent in 61.65% (n=164), this is not a surprising result. The federal government will have the most resources of any litigant, making legal challenges very difficult for opposing parties.

**Conclusion**

As one of the largest statutes in this dataset, the Clean Water Act provided a good source of data for analyzing underdog success at the Court of Appeals. The federal government, and upperdogs in general, consistently prevailed, but this was also a statute where underdogs won twenty-percent of the time. Nonprofits were the most successful underdog, winning 39 cases. This was the most favorable statute for nonprofit litigants in the entire dataset and could provide insight into how less-advantaged parties can prevail in court. Additional research is needed into the resources nonprofits had and how they chose to allocate them in the legal system. Was their unique success due to the issue area of water pollution? Did nonprofit
litigants use different legal strategies for CWA cases than the other statutes in this dataset? What can litigants learn from the success of nonprofit organizations in this area?

It would also be helpful to know if more amicus briefs were submitted in support of the nonprofits as compared to other environmental law areas. Limited access to the amicus briefs prevented analysis at this time, but it would be interesting to look at which types of litigants chose to submit briefs and if those briefs mattered in the final outcome or influenced content in the final opinion. We know amicus briefs can help less-advantaged litigants in other issue areas and they may also be a meaningful component to nonprofits prevailing under the Clean Water Act.

Lastly, the findings in this chapter provide a good foundation for future research into the potential success of forum shopping and the success of nonprofit litigants when they are almost entirely outmatched in the legal arena. None of the circuit variables were statistically significant, but descriptively, litigant success rates varied depending on the circuit. The Ninth Circuit is often thought to be a friendlier pro-environment circuit and it was the most successful for nonprofit litigants. It was also the most successful for the federal government, though. Were nonprofits better at selecting the forums than other underdog litigants? Why did the federal government win more cases in the Ninth Circuit than on their home turf in the D.C. Circuit? For litigants with more limited resources, understanding which circuits are likely to be more favorable to their interests can be an effective way to make resource allocation decisions. Ultimately, the findings in this chapter illustrate the continued dominance
of the federal government and upperdog litigants, but show that underdogs can prevail on a limited basis.
CHAPTER 6

FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT AND TOXIC SUBSTANCES CONTROL ACT

Introduction

In the last fifty years, more than 10,000 chemical substances have been put to use in the market and many are still consumed commercially. The two statutes that regulate the manufacture and distribution of these statutes are the Toxic Substances Control Act (TSCA) and the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). Unlike other environmental statutes, these regulate toxic products both at the production and market stage. The two statutes complement each other well, as FIFRA regulates pesticides excluded by TSCA. TSCA’s inventory includes more than 84,000 chemical substances and over 1300 substances are registered under FIFRA. Combined, these laws encompass chemical substances listed by the Environmental Protection Agency (EPA) that are produced, distributed, and consumed in the United States.

The final two statutes in this analysis are a departure from the previous chapters on the Resource Conservation and Recovery Act (RCRA), Clean Air Act (CAA), and Clean Water Act (CWA) in their purpose and process, but are an important area to address within environmental law and policy. FIFRA and TSCA target businesses working with chemical substances, offering the opportunity to
observe how underdog resources with financial resources succeed or fail in the court system at the Court of Appeals.

**Legislative Background: TSCA and FIFRA**

In 1976, TSCA was enacted to “prevent unreasonable risks of injury to health or the environment associated with the manufacture, processing, distribution in commerce, use or disposal of chemical substances” (Ferrey 2010). Chemicals are defined in §3(2) as “any organic or inorganic substance of a particular molecular identity.” Exclusions include substances regulated under FIFRA, substances such as drugs and cosmetics covered by the Federal Food Drug and Cosmetics Act, and nuclear material covered by the Atomic Energy Act. TSCA’s structure involves an inventory of all chemical substances used commercially. The statute was the first to regulate all of the stages of a chemical substance for the purpose of protecting public health (Ferrey 2010, 602). Its intent was to be proactive and restrict or ban products prior to introduction into the market and thus prior to the chemicals causing toxic pollution (Collins 2010).

Procedurally, this statute establishes an inventory of chemicals meeting the statutory standards. For a new chemical substance or for an existing substance used for a “significant new use,” there is a required 90-day pre-manufacture notice before the manufacture or import can take place under §5 (Ferrey 2010). Failure to do so can result in the EPA banning the manufacture, imposing restrictions, or restricting the processing or distribution. Of the 23,971 new chemicals approved by the EPA from
1976–1994, however, 90% were approved with no restrictions on use or production, making this one of the most heavily criticized parts of TSCA (Collins 2010).

Under §4, the EPA is authorized to issue chemical test rules, regulate or ban chemical substances (§6), solicit research on possible risks of injuries for substances that may significantly impact human health or the environment (§8), and finally impose regulations on the import and export of listed chemicals (§13) (Ferrey 2010, 602). Fines for violating this process can be up to $32,500 each day of the violation or up to a year imprisonment. The EPA can also seek criminal and civil penalties. There are several challenges with these provisions, leading Ken Cook of the Environmental Working Group to refer to TSCA as “a largely toothless statute” (Collins 2010).

One of the most significant challenges related to §6 arose in 1991 after *Corrosion Proof Fittings v. EPA* was decided. In this case, Corrosion Proof Fittings challenged an EPA rule establishing a three-stage ban of asbestos to prohibit the future manufacture, importation, processing, or distribution of products containing the substance. The court held that the EPA committed a procedural error in not allowing for public comment, that it violated provisions of TSCA by not selecting the “least burdensome, reasonable regulation,” and by not conducting a separate cost-benefit analysis (Stadler 1993). The court argued “the EPA’s regulation cannot stand if there is any other regulation that would achieve an acceptable level of risk as mandated by TSCA” and the result of this decision is the EPA no longer being able to restrict dangerous chemicals currently in production and use (Collins 2010). This case eliminated the EPA’s ability to use TSCA to restrict dangerous chemicals and with its
occurrence right before the dataset starts, it is likely a number of the cases were the result of this limitation on the EPA’s regulatory authority in this area.

The other significant challenge relates to an important testing and reporting loophole created. Twenty-two years after the passage of TSCA, the EPA only tested 263 high-priority chemicals for over 70,000 existing chemicals (Collins 2010). For other substances covered by the statute, the EPA has to rely on testing data provided by the very companies marketing the chemicals. There is minimal to no EPA enforcement of corrupt laboratories or fraudulent testing with the agency even offering an amnesty program in 1990. This program limited fines for fraudulent human studies to $15,000 or $6,000 for animal studies with no corporation’s fines higher than $1 million if companies who violated the TSCA reporting requirements sent the data they had illegally withheld. Without the program, fines would have been $32.9 million for any fraudulent study. During this time of this amnesty program, over 120 companies sent more than 11,000 reports detailing harmful health effects of their chemicals, saving the companies billions of dollars (Collins 2010, 121). The agency and chemical manufacturing leaders declared the program a success, repeating it several times, as environmentalists renewed their legal and reform efforts.

Today TSCA is considered a balancing statute requiring the EPA to establish a “‘reasonable basis’ . . . that the manufacture, processing, distributing, use, or disposal of a specific chemical substance presents an ‘unreasonable risk of injury to health or the environment’” (Ferrey 2010). Determining what constitutes “reasonable” is very difficult with the data limitations and offers a gaping hole for
businesses to escape fines through. A substance is only allowed into public commerce if its benefits outweigh the environmental costs (p. 606). This cost-benefit analysis can often be very time-consuming and expensive to complete, but if a business does not voluntarily comply, the EPA can take the noncompliant party to court for testing expenses. Expenses are calculated using a penalty formula in which the nature, extent, and circumstance are evaluated with a maximum amount of $25,000 per day in civil penalties. On paper, this may sound cost-prohibitive, but the lax enforcement and amnesty deals of the EPA make prosecution by the agency rare and in this dataset, the agency never appeared as petitioner for a TSCA or FIFRA case.

FIFRA is similar to TSCA in that it regulates toxic substances, but it exclusively covers pesticides and herbicides and is less controversial. A pesticide is defined as “any substance or mixture or substances that is (1) intended for preventing, destroying, repelling, or mitigating any pest, or (2) intended for use as a plant regulator, defoliant, or desiccant” (Ferrey 2010). It is important to note that the statute’s focus is on the intended use of a substance and not its level of toxicity. Every pesticide under this statute is required to bear an EPA-approved label that articulates the risks it presents and instructions on proper use.

This statute was enacted in 1947 with no purposeful concern for environmental protection or secondary impacts from the use of pesticides. FIFRA’s main goals were to ensure a pesticide performed its function of killing the target pest and that consumers using the products were sufficiently protected by instructions on the pesticide label. It focused on the users of the pesticides and farmers. This user-
centered perspective is a distinct difference from other statutes with regulations based on levels that could have hazardous effects on people in the area. Use of a substance in any way other than for what is expressly listed on the label is illegal.

The process for FIFRA is comparable to that of TSCA with companies first submitting an application detailing the formula of inactive and active ingredients, a proposed label, and description of tests conducted and the results. The EPA reviews the application for four registration standards: the chemical composition warrants the proposed claims, labeling meets FIFRA standards, the pesticide will perform the intended function without unreasonable adverse effects, and when used with commonly recognized practices, the substance will not cause unreasonable adverse effects on the environment. If, at any point, a company adds a new active ingredient, the pesticide must be registered again. The EPA is authorized to cancel a substance if it determines it poses a substantial threat to human safety and issues a Notice of Intent to Cancel in that situation. The agency can also issue an immediate ban if there is an imminent hazard to humans or the environment.

Following the public awareness created by Rachel Carson’s *Silent Spring* in 1962, creation of the EPA in 1970, and amendments including the Federal Environmental Pesticide Act of 1972, FIFRA provisions were strengthened to make the statute one that protects both human health and the environment (Ferrey 2010). States have primary authority for enforcement under FIFRA, but the licensing conducted by the EPA means the agency has a significant role as well.
While FIFRA and TSCA have differing areas of emphasis, they both attempt to regulate the use and production of chemical substances through similar procedures, and are therefore sufficiently comparable for this research. They also represent an important area of environmental law by regulating substances that have the potential to cause significant human and environmental damage.

Theoretical Relationships and Concepts (See Appendix A)

As described in Chapter 2, the main theoretical focus is on how the legal model and litigant resources explain underdog success at the Court of Appeals.

The legal model will test concepts of *Chevron* and statute-specific case characteristics to measure the impact of case facts, which this model predicts should explain court decisions. Specifically, this calls for the following independent variables: *Chevron* citation (dichotomous variable for whether the opinion was cited in the majority opinion), FIFRA (whether or not it is a FIFRA case), case characteristics (statute-specific dichotomous variables for whether a particular provision was cited in the majority opinion), gender (dichotomous variable for presence of a female judge), race (dichotomous variable for presence of a minority judge), amicus brief (dichotomous variable for if a brief was submitted), and respondent success (dichotomous variable for whether the respondent won). The main variables of interest for the legal model are case characteristics, *Chevron* citation, and FIFRA.
To control for the influence of ideology as described by the attitudinal model and for strategic behavior, two variables are included: ideological distance (JCS score\(^3\) of median judge on the panel subtracted from the median circuit ideology by case year) and panel ideology (median JCS score of the panel). All of the variables for both the legal and litigant resource models are put into one model for testing. This allows the variables to compete directly to explain outcomes. It is better than testing separate models because the only variables that will be significant are those that explain outcomes after accounting for the variables in the competing theory. The single model is therefore a more stringent test of the theories.

**Data, Methods, and Hypotheses**

I analyze the data quantitatively to test the theories and due to the number of cases and variables included in the models. With a dichotomous categorical dependent variable measuring whether or not the underdog won the case (0=underdog loss, 1=underdog win), I use a logit model in STATA. This MLE regression technique is appropriate because the dependent variable of underdog success can only have two predefined values (Halcoussis 2005). Logit produces a model estimate that can be used to calculate the probability of underdogs winning, given the values of the predictor variables described below.

---

\(^3\) The Judicial Common Space (JCS) scores are built from the Poole and Rosenthal Common Space and the Giles, Hettinger, Peppers (GHP) scores to get the ideal point policy preferences of Supreme Court justices and obtain comparable measures for lower court judges (Epstein et al 2007, Poole and Rosenthal 1997, and Giles, Hettinger, and Peppers 2001).
I acquired the data using a search in LexisNexis and Westlaw for cases decided between 1993–2008, covering both the Clinton and W. Bush presidential administrations. Both search sites were used to ensure all available cases were considered. Cases were excluded if the opinion did not decide a statutory issue on the merits, if the petition is denied and granted in part (with no clear winner), or if the case only has a citation to the statute. This resulted in twenty-four TSCA cases and forty-one FIFRA cases. The final dataset included 64 cases with one case dropped because of missing data.

As shown by the logit model in Table 10 below, the statutes were combined into one dataset with a dichotomous independent variable added for FIFRA. On statistical grounds, the statutes were combined to increase the number of cases and have sufficient degrees of freedom for a quantitative analysis. From a theoretical perspective, TSCA covers aspects of chemical substance use that FIFRA does not, but they are in the same class of environmental law, making them comparable for a single analysis.
Table 10: Logit Model of Underdog Success for FIFRA/TSCA Cases

<table>
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<th>Model without Litigant included</th>
<th>Final Model</th>
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<td>LR Chi-2</td>
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</tr>
<tr>
<td>Pseudo R2</td>
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<td>Petitioner type</td>
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<td>1.277425 (0.257)</td>
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<td>Minority judge</td>
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<td>1.491318 (0.537)</td>
</tr>
<tr>
<td>Female judge</td>
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<td>–1.158423 (0.542)</td>
</tr>
<tr>
<td>Panel ideology</td>
<td>–0.5339836 (0.655)</td>
<td>3.93646 (0.286)</td>
</tr>
<tr>
<td>Circuit ideology</td>
<td>0.705312 (0.692)</td>
<td>…</td>
</tr>
<tr>
<td>Amicus</td>
<td>3.115468 (0.014)**</td>
<td>4.080879 (0.293)</td>
</tr>
<tr>
<td>Chevron</td>
<td>0.5067418 (0.644)</td>
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</tr>
<tr>
<td>FIFRA</td>
<td>3.694216 (0.096)</td>
<td>7.253873 (0.143)</td>
</tr>
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<td>136</td>
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<td>0.0717656 (0.982)</td>
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</tbody>
</table>

* p<0.05  ** p<0.01  *** p<0.001

Each case is coded for specific statutory provisions to help understand whether litigants are more or less likely successful arguing on specific legal grounds. Every statutory provision mentioned in a case during this time period is included. As with the other statutes in this dissertation, only provisions that appeared ten or more
times in cases are included in the model. For FIFRA this included the following: §136 (definitions), §136a(a) (registration of pesticides), and §136v(a-b) (authority of states). For TSCA, only §2601(2) (findings, policy, and intent) appeared a minimum of ten times. The logit results for the final combined model are summarized in Table 10 and I find only the respondent winning to be a significant predictor of upperdog success/underdog failure.

**Hypotheses**

The hypotheses for FIFRA/TSCA are based on my expectations described previously in Chapter 2 and the results for each one will be discussed in the following results section.

**Results**

For FIFRA, there were a total of 41 cases from 1993–2008. As described in Tables 11 and 12 below, the majority of cases were decided in 1999 (n=6 or 14.63% of FIFRA) and 1993 (n=5 or 12.20% of FIFRA). Approximately 70% of these opinions were published and similar to RCRA, *Chevron* was cited very rarely (n=1). As discussed in the previous chapters, this is a very high publication rate and may bias the conclusions. Six cases had amicus briefs submitted. 36.59% (n=15) of FIFRA panels had at least one minority judge on the panel. For the four cases in which the EPA was listed as the first party, they always appeared as the respondent and prevailed in each case. Out of a total forty-one cases addressing FIFRA, nineteen panels had at least
one female judge (46.34%). 47.69% of the panels in the combined statutes had at
least one female judge.

Table 11: Frequency of FIFRA and TSCA Cases by Year

<table>
<thead>
<tr>
<th>Year</th>
<th>FIFRA</th>
<th>TSCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>5 (12.20%)</td>
<td>...</td>
</tr>
<tr>
<td>1994</td>
<td>2 (4.88%)</td>
<td>2 (8.33%)</td>
</tr>
<tr>
<td>1995</td>
<td>4 (9.76%)</td>
<td>2 (8.33%)</td>
</tr>
<tr>
<td>1996</td>
<td>1 (2.44%)</td>
<td>...</td>
</tr>
<tr>
<td>1997</td>
<td>2 (4.88%)</td>
<td>3 (12.50%)</td>
</tr>
<tr>
<td>1998</td>
<td>1 (2.44%)</td>
<td>...</td>
</tr>
<tr>
<td>1999</td>
<td>6 (14.63%)</td>
<td>1 (4.17%)</td>
</tr>
<tr>
<td>2000</td>
<td>2 (4.88%)</td>
<td>5 (20.83%)</td>
</tr>
<tr>
<td>2001</td>
<td>2 (4.88%)</td>
<td>1 (4.17%)</td>
</tr>
<tr>
<td>2002</td>
<td>4 (9.76%)</td>
<td>2 (8.33%)</td>
</tr>
<tr>
<td>2003</td>
<td>1 (2.44%)</td>
<td>1 (4.17%)</td>
</tr>
<tr>
<td>2004</td>
<td>2 (4.88%)</td>
<td>...</td>
</tr>
<tr>
<td>2005</td>
<td>4 (9.76%)</td>
<td>2 (8.33%)</td>
</tr>
<tr>
<td>2006</td>
<td>2 (4.88%)</td>
<td>1 (4.17%)</td>
</tr>
<tr>
<td>2007</td>
<td>2 (4.88%)</td>
<td>...</td>
</tr>
<tr>
<td>2008</td>
<td>1 (2.44%)</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>41</td>
<td>24</td>
</tr>
</tbody>
</table>
Table 12: Frequency of FIFRA and TSCA Cases by Circuit

<table>
<thead>
<tr>
<th>Circuit</th>
<th>FIFRA</th>
<th>TSCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2 (4.88%)</td>
<td>1 (4.17%)</td>
</tr>
<tr>
<td>2</td>
<td>4 (9.76%)</td>
<td>1 (4.17%)</td>
</tr>
<tr>
<td>3</td>
<td>3 (7.32%)</td>
<td>...</td>
</tr>
<tr>
<td>4</td>
<td>4 (9.76%)</td>
<td>2 (8.33%)</td>
</tr>
<tr>
<td>5</td>
<td>5 (12.20%)</td>
<td>3 (12.50%)</td>
</tr>
<tr>
<td>6</td>
<td>4 (9.76%)</td>
<td>2 (8.33%)</td>
</tr>
<tr>
<td>7</td>
<td>2 (4.88%)</td>
<td>1 (4.17%)</td>
</tr>
<tr>
<td>8</td>
<td>6 (14.63%)</td>
<td>...</td>
</tr>
<tr>
<td>9</td>
<td>6 (14.63%)</td>
<td>3 (12.50%)</td>
</tr>
<tr>
<td>10</td>
<td>2 (4.88%)</td>
<td>2 (8.33%)</td>
</tr>
<tr>
<td>11</td>
<td>3 (7.32%)</td>
<td>1 (4.17%)</td>
</tr>
<tr>
<td>12</td>
<td>0</td>
<td>7 (29.17%)</td>
</tr>
<tr>
<td>13</td>
<td>...</td>
<td>1 (4.17%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>41</strong></td>
<td><strong>24</strong></td>
</tr>
</tbody>
</table>

Under FIFRA, individuals won five cases across multiple circuits, but were the least successful in the Eighth (n=5) and Ninth (n=5) Circuits. Nonprofit organizations also struggled the most in the same circuits, losing six and five cases, respectively. Businesses were the most successful litigant type, prevailing most often in the Fifth (n=5), Eighth (n=6), and Ninth (n=5) Circuits. State and local governments only won two cases and lost most often in the Fifth (n=5), Eighth (n=6)
and Ninth (n=5) Circuits. Finally, the federal government won two cases in the Ninth Circuit and lost six cases in the Eighth Circuit and five cases in the Fifth Circuit.

Tables 13 and 14 demonstrate how businesses were the most successful litigant type under FIFRA, winning 65.85% (n=27) of the cases. They appeared as the respondent in twenty-five cases (60.98%) and as the petitioner in eight cases (19.51%). Environmental groups were the most unsuccessful litigant type under FIFRA, winning only two cases (4.88%). They never appeared as the respondent and only six times as the petitioner. This largely reflects the statute’s emphasis on conflicts involving businesses and chemical manufacturers.

Table 13: Underdog Success by Litigant Type (FIFRA-Only)

(n=Number of Times in Which Each Type Faced in a Case)

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Individual</th>
<th>Nonprofit</th>
<th>Business</th>
<th>State and Local Government</th>
<th>Federal Government</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Petitioner</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td>...</td>
<td>...</td>
<td>14.29%</td>
<td>33.33% (n=1)</td>
<td>50% (n=1)</td>
</tr>
<tr>
<td>Nonprofit</td>
<td>...</td>
<td>...</td>
<td></td>
<td>66.67% (n=2)</td>
<td>0% (n=3)</td>
</tr>
<tr>
<td>Business</td>
<td>33.33% (n=1)</td>
<td>...</td>
<td>66.67% (n=2)</td>
<td>100% (n=1)</td>
<td>0% (n=1)</td>
</tr>
<tr>
<td>State and Local Government</td>
<td>...</td>
<td>...</td>
<td>100% (n=1)</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Federal Government</td>
<td>...</td>
<td>...</td>
<td></td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>
Table 14: Underdog Success by Litigant Type as Petitioner or Respondent (FIFRA-Only)

(Percentage of underdog success when a litigant appeared as petitioner or respondent)

<table>
<thead>
<tr>
<th></th>
<th>Petitioner</th>
<th>Respondent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Individual</strong></td>
<td>19.23%</td>
<td>33.33%</td>
</tr>
<tr>
<td></td>
<td>(n=5)</td>
<td>(n=1)</td>
</tr>
<tr>
<td><strong>Nonprofit</strong></td>
<td>33.33%</td>
<td>…</td>
</tr>
<tr>
<td></td>
<td>(n=2)</td>
<td></td>
</tr>
<tr>
<td><strong>Business</strong></td>
<td>50.00%</td>
<td>24.00%</td>
</tr>
<tr>
<td></td>
<td>(n=4)</td>
<td>(n=6)</td>
</tr>
<tr>
<td><strong>State and Local Government</strong></td>
<td>0%</td>
<td>57.14%</td>
</tr>
<tr>
<td></td>
<td>(n=1)</td>
<td>(n=4)</td>
</tr>
<tr>
<td><strong>Federal Government</strong></td>
<td>16.67%</td>
<td>…</td>
</tr>
<tr>
<td></td>
<td>(n=1)</td>
<td></td>
</tr>
</tbody>
</table>

An interesting descriptive result from FIFRA is that businesses were the most successful litigant type, prevailing in 26 of 41 cases (63.41%). This is the only statute of the dataset where this occurs and reflects the unique nature of this legal environmental issue. Businesses were also the most frequent respondent in 25 (60.98%) of FIFRA cases for a statute where respondents won 70.73% of the time. Compared to other statutes, the federal government played a lesser role in FIFRA cases at the circuit level and this may explain the higher success rates observed for businesses.
In the final dataset for TSCA, only twenty-four cases met the coding rules described in Chapter 2 with the most decided in 2002 (n=5 or 20.83%). (See Table 12.) Of the twenty-four TSCA cases, 50% had at least one female judge. Sixty-seven percent (n=16 of TSCA) of these opinions were published. Eight cases (33.33%) cited *Chevron* and only one had an amicus brief. TSCA only had 34.78% (n=8) of cases with at least one minority present on the panel. Lastly, the EPA was more involved in TSCA as a party to fifteen cases and winning seven. The federal government did not appear as a petitioner in a single case, but was the respondent in 95.83% of the cases (n=23).

For TSCA, Table 15 illustrates how businesses appeared as petitioners 50% (n=12) of the time and as a respondent 4.17% (n=1). After the federal government, they were the most successful type of litigant (n=5 or 20.83% of all TSCA cases). Businesses were most successful in the D.C. Circuit winning four cases and the least successful in the same circuit, losing three cases. TSCA largely involved businesses and the federal government, greatly limiting any meaningful information about nonprofit or environmental groups. As shown in Table 16, individuals never appeared as respondent and only listed first as the petitioner in three cases (12.50%). Nonprofit litigant types won one case in the Ninth Circuit and lost twenty-three, with the greatest number of losses in the D.C. Circuit.
Table 15: Underdog Success by Litigant Type (TSCA-Only)

(n=Number of Times in Which Each Type Faced in a Case)

<table>
<thead>
<tr>
<th>Petitioner</th>
<th>Individual</th>
<th>Nonprofit</th>
<th>Business</th>
<th>State and Local Government</th>
<th>Federal Government</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Individual</strong></td>
<td>...</td>
<td>...</td>
<td>100%</td>
<td>...</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Nonprofit</strong></td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>66.67%</td>
</tr>
<tr>
<td><strong>Business</strong></td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>50%</td>
</tr>
<tr>
<td><strong>State and Local</strong></td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Government</strong></td>
<td>...</td>
<td>...</td>
<td>...</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Federal</strong></td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>

(n=Number of Times in Which Each Type Faced in a Case)
Table 16: Underdog Success by Litigant Type as Petitioner or Respondent (TSCA-Only)

<table>
<thead>
<tr>
<th></th>
<th>Petitioner</th>
<th>Respondent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>12.50%</td>
<td>...</td>
</tr>
<tr>
<td></td>
<td>(n=1)</td>
<td></td>
</tr>
<tr>
<td>Nonprofit</td>
<td>66.67%</td>
<td>...</td>
</tr>
<tr>
<td></td>
<td>(n=2)</td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>50.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td></td>
<td>(n=6)</td>
<td>(n=1)</td>
</tr>
<tr>
<td>State and Local</td>
<td>0%</td>
<td>...</td>
</tr>
<tr>
<td>Government</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(n=1)</td>
<td></td>
</tr>
<tr>
<td>Federal Government</td>
<td>...</td>
<td>34.78%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(n=8)</td>
</tr>
</tbody>
</table>

Of the TSCA cases, three panels were 100% (n=3) Democrat-appointed judges, eight panels (36.36%) were composed of two-thirds Democrat-appointed judges, and seven panels (31.82%) had one Democrat-appointed judge. In comparison, a majority of the FIFRA panels had 33% Democrat-appointed judges (n=18 or 43.90%) and fifteen panels were 66% Democrat-appointed (n=15).

In terms of litigant success under TSCA, individuals only won a total of two cases: one in the First Circuit and one in the Seventh. As with nonprofits, businesses, and state and local governments, the D.C. Circuit was the least favorable circuit to underdogs and the circuit in which these litigant types suffered the largest number of
losses. The federal government was the least successful in this circuit, losing three cases, but it was also the most successful circuit for this litigant type (n=4).

The only statistically significant variable in the combined FIFRA/TSCA model is whether the respondent won (litigant). The federal government appeared as a respondent in 29 cases and businesses were the second-largest type appearing as a respondent in 26 cases. Table 10 illustrates the difference in models when this variable is removed. With the log-ratio higher in the model including litigant, the better-specified model is reported here. Each of the specific hypotheses for the combined FIFRA/TSCA model will now be discussed.

**Hypothesis 1.** I expect upperdogs to remain the most successful litigants in FIFRA/TSCA with the federal government remaining the most effective litigant type.

The data supports this hypothesis with underdogs being the most successful litigants, but the federal government is not the most effective litigant type. Combined, upperdogs won 67.69% (n=44) of the cases. Under FIFRA (Tables 13 and 14), upperdogs were even more successful, winning 70.73% (n=29) as compared to winning 62.50% (n=15) under TSCA (Tables 15 and 16). However, the federal government is not the most successful litigant type. Businesses won 47.69% of the cases (n=31) and the federal government won 30.77% (n=20). Neither petitioner nor respondent type was statistically significant, but whether the respondent won was statistically significant (p<0.002).
Hypothesis 2. I expect litigant types to be negatively correlated with underdog success. As the opposing litigant has more resources, using the litigant typology as a proxy, the underdog will be less likely to win.

Neither respondent type nor petitioner type was statistically significant in the final model in Table 10 with both statutes. Tables 13 and 15 provide additional insight into this. Eighty-three percent (n=54) of petitioners were either individuals or businesses and 84% (n=55) of respondents were either businesses or the federal government. The lack of diversity among litigant types, as compared to the other statutes in this research, may explain these results.

Hypothesis 3. The presence of a female judge on the panel will be positively correlated with the liberal outcome of underdog success.

Gender was not statistically significant in Table 10, meaning we cannot draw any meaningful conclusions on the relationship between gender and underdog success. Figure 4 below illustrates underdog success by litigant type when there was a minority and/or a woman on the panel. The probability of an underdog winning with both a minority and female judge on the panel was 0.03. This is very close to the probability of underdog success if neither a minority nor female justice was on the panel (0.02). If there was only a minority on the panel, an underdog’s probability of success was 0.08. Underdogs had the lowest probability of success (0.006) if there was only a woman on the panel.
Figure 4: Probability of Underdog Success for FIFRA/TSCA

Hypothesis 4. FIFRA and TSCA are unique in that they are the only statutes in this dataset without citizen suit provisions.

Hypothesis 5. I expect underdogs to be less likely to win when *Chevron* is cited in the majority opinion.

*Chevron* was not statistically significant in the final model. It was only cited in nine of the 65 cases (13.85% of the case population). This may be due to the highly technical and process-oriented nature of these statutes and the chemicals regulated. For this area of law, there may be a more applicable precedent to guide the courts, requiring a detailed content analysis of opinions in the future. It may also be the case
where judges cite the Administrative Procedures Act (APA) instead of *Chevron* as discussed in Chapter 1.

**Hypothesis 6.** I expect amicus briefs to be statistically significant in favor of underdogs.

Amicus briefs were not statistically significant in this model. This could be due to several possibilities. First, this concept is measured as a dichotomous variable, which may be a less precise measurement than what is necessary to get at a true relationship between briefs and underdog success. Second, data limitations prevented looking at who submitted the briefs and for which litigant they supported. It may be the situation where underdogs do not have amicus briefs advocating their position. Third, the judicial literature suggests amicus briefs can be a measure of case salience and in light of the small number of cases at the Court of Appeals, this may not be a high salience issue area despite the civil penalties possible. Fourth, the highly technical nature and trade secret challenge of chemicals regulated by these statutes may limit or discourage amicus participation.

**Hypothesis 7.** I expect underdogs to be unsuccessful when the respondent wins.

The lone variable of significance in this model was respondent success. When the respondent won, underdogs were at a tremendous disadvantage. Uppermans won as respondents in 42 of 44 cases, compared to underdogs only winning three cases as respondents. This is consistent with expectations that respondents will continue to be
successful in the area of environmental law as they are more broadly at the Court of Appeals. Table 10 shows the difference in models when this variable is excluded.

As the analysis of FIFRA and TSCA demonstrates, these statutes are different in several ways from others in the dataset. The smaller sample size is one way. Compared to RCRA, the CWA, and CAA, there were far fewer cases reaching the circuit courts even before the coding rules were applied. The smaller dataset could be a result of more statutory issues being resolved at the district court level or possibly through the EPA regulatory process of registering the substances. Collins (2010) noted the lax enforcement of the EPA and the agency’s decision to perhaps not seek an appeal or even a trial at the district court could also explain the low case numbers. Although not given as often as they could be, the large civil penalties possible under TSCA may be a strong incentive for businesses to comply with the registration and licensing process and avoid additional sanctions or wait until an amnesty program is made available. Additionally, both statutes place responsibility for enforcement with the states. This is not unique to these statutes, but may explain the lower case numbers at this level of the federal judiciary.

Looking at the types of litigants involved in these cases, the litigant pool was less diverse and focused largely on businesses and the federal government. Nonprofit organizations did not participate as extensively as either petitioner or respondent, compared to their involvement in the CWA, CAA, or RCRA. Despite their role in enforcement, state and local governments did not play as prominent a role as
expected. Tables 13 and 15 illustrate underdog success depending on which litigants types were opposing each other and notes the frequencies of each match-up. For TSCA, the most common case pairings (n=7) were individuals as petitioners vs. the federal government. The most common matches in FIFRA were individuals as petitioners (n=3) and nonprofits vs. the federal government (n=3).

This litigant composition can have implications for certain types of underdogs. Winning only 6.15% (n=4) cases, nonprofit litigants were not successful in this area of law. TSCA and FIFRA do not have citizen suit provisions and this may be a deterrent to pursuing cases. The low success rate for this litigant type may have added importance considering the limited resources many of the nonprofits must work with. One of the organizations, No Spray Coalition, is a volunteer organization that opposes spraying of pyrethroid pesticides in New York. They petitioned the State of New York in two cases and won once. With a geographic focus and limited resources as a small volunteer group, this type of litigant has to be selective in the cases it pursues. Similarly, the Northwest Coalition for Alternatives to Pesticides is an Oregon-based organization focused on sustainable agriculture, pesticide-free places such as school playgrounds, and effects of pesticides on local salmon runs. For the one case the Coalition petitioned, they faced the EPA and were unsuccessful.

In contrast to the smaller organizations, the other groups in this category were as follows: Headwaters, Inc., a lobbying organization for energy distribution and production, the Natural Resources Defense Council (NRDC), one of the largest environmental lobbying organizations, and the Sierra Club, the largest organization in
this category for FIFRA and TSCA. While these organizations all have the resources to engage in litigation, pesticides and chemical substances are low on their published financial contributions scale (Open Secrets 2013). Headwater petitioned the Talent Irrigation District in Oregon in one case and prevailed over the state government. With nearly a quarter-million dollars in lobbying revenue alone and 10 of its 11 lobbyists having previously served as government employees, Headwater has the financial and personnel resources to pursue more cases, but focuses on Superfund lobbying instead.

The NRDC is one of the most well known environmental organizations with litigation at the core of its agency mission followed by lobbying and supporting Democrat politicians. Their issue areas of emphasis shift depending on political issues of the time, which may explain why they did not pursue many cases during the period of data included for this analysis. There were no major policy initiatives during the W. Bush and Clinton administrations, likely not prompting the NRDC to pursue legal claims. Similarly, the Sierra Club has a wide range of environmental issues it advocates through litigation, a Super PAC, a 527 group, and education/outreach efforts. During the time period of study for this statute, the Sierra Club was only involved in two cases and won both against the government. Both the NRDC and Sierra Club have the resources to be more involved in litigating pesticides and chemicals, but additional research is necessary to understand how and why they choose to file so few petitions.
Policy involvement of environmental organizations has changed recently with the proposal of the bipartisan Chemical Safety Improvement Act (CSIA) by Senator Frank Lautenberg (D-NJ) and Senator David Witter (R-LA) on May 22, 2013. The CSIA is the first significant reform to TSCA since the statute’s passage and is designed to require the EPA to test high-risk chemicals prior to their introduction to the market. Whereas under TSCA, the EPA can only request safety testing on a chemical if there is evidence it will put people at risk, the CSIA would require all chemicals to be tested and increase the EPA’s regulatory authority to do so. Additionally, it streamlines introduction of new chemicals and adds protections for trade secrets (AAAS 2013). This proposed bill has bipartisan support of over 20 senators from states throughout the country (U.S. Congress 2013). The Environmental Defense Fund, Chamber of Commerce, and the American Chemical Council have also endorsed the Senate-introduced bill.

The environmental community has not unified behind the CSIA, however, and as this bill moves through Congress, the voices of opposition will likely increase. One objection is that the CSIA would preempt state laws such as California’s “Global Warming Solutions Act” (AB 32) plus additional bills in the state regulating ozone pollution, drinking water, and consumer product safety. The California EPA has argued its laws go beyond the federal standards and provide a good example for effective legislation and these would all be damaged by CSIA in its current form (Sharp 2013).
Earthjustice, Greenpeace, the Environmental Working Group, and Breast Cancer Fund are four of approximately 15 groups welcoming efforts at improving regulation of chemicals, but opposing CSIA in its current form. Earthjustice argues the bill does not give the EPA authority to demand data critical to making a decision on whether a chemical is safe and echoes concerns of the California EPA about CSIA limiting the actions of states (Putrich, 2013). The Safer Chemicals, Happier Families coalition also notes that CSIA continues problems inherent in TSCA such as not establishing deadlines or timetables and fails to protect vulnerable populations from chemical exposure (Safer Chemicals 2013). These organizations and state agencies will continue lobbying Congress as CSIA moves from the Senate Committee on Environment and Public Works, knowing that if eventually passed, the next battleground will be in the court system.

**Conclusion**

Overall, neither the legal model nor litigant resources helped understand underdog success in chemical substance cases. The only significant variable in the final model was success of the respondent and how this disadvantaged underdog litigants. The findings in this chapter speak to the need for additional research into this unique area of environmental law and a wider search that looks closely at cases beginning at the district court level. A content analysis of the opinions to determine if judges use the APA as an alternate guiding precedent to *Chevron* might also be helpful in understanding the applicability of the legal model. For underdogs looking at how to be most successful in this area, the data provides little guidance.
Future research is needed to better understand why litigant types such as nonprofits or state and local governments are less involved in this statute, whether there are alternate administrative processes used in this environmental area outside of the courts, and monitoring whether this changes with the potential reform of TSCA by the CSIA. Until this statute is passed, lobbying for favorable language and processes offers the most promise for litigants seeking policy, and ultimately legal, reform. This dataset marks the first quantitative analysis of this environmental law issue area, though, and provides a snapshot of the types of cases heard by the Court of Appeals.
CHAPTER 7  
CONCLUSION

This research marks an original quantitative analysis of environmental laws during this time period at the Court of Appeals. Including 566 cases in the final models for five major environmental statutes, I provide a meaningful contribution to both the judicial politics and environmental literatures. By testing the legal models and litigant resources with data from a largely ignored area of law, I was able to discover the extent to which the models help explain judicial outcomes and what litigants are able to learn about litigation in this field of law.

My initial research design as discussed in Chapter 1 was to look at the relationship between judicial behavior and litigant resources using the Resource Conservation Recovery Act (RCRA), Clean Air Act (CAA), Clean Water Act (CWA), the Toxic Substances Control Act (TSCA), and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). For each statute, I coded every statutory provision cited in the opinions to understand if and how specific case characteristics explain underdog success. By definition, underdogs have fewer resources than their opponents in court and I wanted to see if they were able to prevail on the merits of the statute, as the legal model would suggest. I also tested for the influence of ideology and strategic behavior by including ideological scores for every judge on the deciding panel and then an overall ideological distance measure. We know that judicial ideology is a strong predictor of outcomes at the Supreme Court, but the influence is
less clear at the Court of Appeals and with environmental cases generally. Using both a descriptive approach to understand the types of cases being litigated and a quantitative analysis, I am able to present an original analysis of litigation in environmental law at the appellate courts.

Across all five statutes, upperdogs won a majority of the time. RCRA was the most favorable statute, with upperdogs winning 77.07% (n=121) and TSCA was the least favorable statute for upperdogs (n=15 or 62.50%). Looking specifically at litigant types, the federal government was the most successful type under RCRA (n=77, 49.04%), CWA (n=193 or 72.56%), and the CAA (n=63 or 63%). Businesses were the most successful under TSCA (n=31 or 47.69%) and FIFRA (n=148 or 55.64%). These findings support prior research on litigant resources and how they contribute to upperdog success.

For the statutes in this dataset, the EPA was the most frequent party for the federal government typology and the most common respondent. It was also the agency delegated enforcement responsibilities. This puts the agency in an advantageous position, particularly when you add legal precedents such as *Chevron* or the Administrative Procedure Act (APA) further instructing the court to defer to the agency’s decisions.\(^4\) For RCRA, the EPA won 43 of the 51 cases to which it was a party. Under the combined TSCA/FIFRA model, the EPA won 11 of its 19 cases. Under the Clean Water Act, the EPA won 58 of its 74 cases. And finally, the EPA

\(^4\) *Chevron* was not statistically significant in any of the five statutes, but is an important indicator variable for this area of law because it calls for judicial deference to the decisions made by federal agencies. It was also a CAA case, which makes it particularly critical to include for this analysis.
won 60 of its 100 CAA cases. These cases demonstrate that successfully challenging the EPA is going to be very difficult with a small likelihood of success.

**Statutory Review**

In large part, there is more support for the litigant resources model and less support for the legal model. The amount of resources a litigant had was consistently the strongest predictor of case outcomes, with case characteristics explaining outcomes for some statutes. Returning first to RCRA (Chapter 3), we find three of the hypotheses supported by the data and several predictor variables for the legal model significant. The most cited case provisions were those found in Subchapter III on Hazardous Waste Management (§6928) and Subchapter 1 (6902, 6903) on congressional findings, policy, and definitions. RCRA was the second largest statute of the research with 157 cases and 115 variables in the final model. It was also the only statute in this dataset for which gender was a significant predictor of underdog success. Previous scholars have looked at the role of gender in sexual harassment or gender discrimination cases where it was less surprising to find presence of a woman to be significant, but it is interesting to find it matters for environmental law and specifically underdog success. I hypothesized that presence of a woman would be correlated with underdog success and the data supported this hypothesis.

One of the most interesting findings of RCRA was the near significance of cases citing the statute’s citizen suit provision (p<0.057). As discussed in Chapters 1

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5 There were 288 observations total, but due to incomplete data, a number of cases were not included in the final model.
and Chapter 4 (RCRA), citizen suits are an important provision allowing litigants to challenge EPA actions given certain restrictions and legal hurdles they must first overcome. I hypothesized that underdogs would be more successful when bringing their case under this statute and the data showed the opposite result. Underdogs were less likely to win when pursuing a case on the citizen suit grounds. More in-depth research is needed to determine if courts are conducting in-depth reviews of the citizen suits or if judges are only allowing the claim to be made and not giving it much attention in the final opinion. Underdogs may also struggle to meet the standard of review necessary for citizen suits and at the appellate level judges might be willing to reverse the opinion of the lower court. Ultimately, this is not a strong legal provision for underdogs to use and one that should be carefully considered in future litigation. With limited resources, other provisions may be more worth the investment for toxic waste cases.

As discussed in Chapter 4, the CAA dataset was a random sample of 100 cases with 549 variables. While it shares some similarities with other statutes, data for this statute also behaved differently in a few instances. Respondent type was significant only for the CAA and in the direction anticipated. As litigant petitioners had more resources, underdogs were less likely to win. Nonprofits were the most frequent petitioner type for the CAA just as they had been in the CWA, but petitioner type was only significant in the CAA. It is not possible to determine which case characteristics are more likely to help or hurt underdog litigants since none of them were statistically significant in this sample.
The CWA (Chapter 5) was the largest statute, with 244 cases in the final model and 230 variables. I coded every case characteristic cited and though only those appearing ten or more times were put in the final model the dataset provides a snapshot of the litigation before the appellate courts in water pollution law. Citizen suits under the CWA closely approached statistical significance in favor of underdogs, which may reflect the greater involvement of water body-specific nonprofits or a greater investment in this legal area by environmental organizations, and contrasts with RCRA’s finding of citizen suits helping upperdogs. It also suggests that underdogs may still find citizen suits to be a worthwhile investment, but that a successful argument should be supported by other legal claims the data found to improve underdogs odds of winning.

Finally, looking at TSCA (Chapter 6), one challenge this statute presented was the small sample size. Only 24 cases met the coding rules and it was therefore combined with FIFRA (n=41) for the quantitative analysis. The only two hypotheses supported by the data were the ones that argued upperdogs would be the most successful litigants and that underdogs would lose when the respondent prevailed.

A distinctive feature of FIFRA and TSCA is that this was the only chapter in which businesses were the most successful litigant type in contrast to the federal government winning in the other three statutes. Under TSCA, businesses were the most frequent petitioner whereas individuals were the most frequent type under FIFRA. By the nature of substances covered by these statutes, businesses are heavily involved in the litigation and the current research demonstrates this and their ultimate
success. Businesses are cast as underdogs using the typology in this dissertation, but for these statutes, they have the most resources and are comparable to the federal government in other statutes when looking at litigant experience and expertise in this area of law. As debate on the Chemical Safety Improvement Act (CSIA) continues, this will be an important area to monitor. Final language of the CSIA could have significant implications on EPA authority to implement its regulations under TSCA.

The common themes across these statutes were upperdog success, significance of the respondent winning and positive correlation with underdog success, and none of the ideology measures being statistically significant. Each statute had distinctive variables of significance, indicating varying degrees of support for the legal model, but indicating more support for the litigant resources model.

**Implications**

Prior to this research, we did not know to what extent the legal model or litigant resources applied to environmental law and to what extent this area of law was different or similar to previously analyzed areas such as search and seizure. Additionally, basic descriptive information about environmental cases appealed through the legal system during this time period did not exist before. My dissertation helps start filling in both of these knowledge gaps.

One of the questions initially propelling this research is how less-advantaged litigants succeed in the court when they are outmatched in many ways. Prior research at the Court of Appeals offers mixed reviews with case characteristics (under the
legal model) mattering in some issue areas and ideology (under the attitudinal model) explaining other areas. I wanted to not only fill in this gap, but also to understand how underdogs can win when these factors are controlled for. Nonprofits have fewer resources than three categories of litigants, so how and when do they prevail in court? In the CWA, for example, nonprofit litigants were the most successful underdog. At this stage of evaluation, the findings invite more questions as to why underdog litigants such as nonprofits do prevail in limited situations when litigant resource theory argues they are less likely to win. A more in-depth content analysis of the opinions in cases nonprofits won is necessary to understand the legal strategies and if those explained success or if there was an interaction between judicial ideology and nonprofit success.

Less interesting than why the EPA wins, is how the EPA loses. Courts are instructed to defer to the agency, but do they? *Chevron* was neither statistically significant nor cited often in any statute. The federal government, often represented by the EPA, was the most successful litigant in three of the five statutes. FIFRA and TSCA were the two exceptions and these statutes primarily involved businesses. The outcomes of cases in this data suggest that whether or not an opinion explicitly cites *Chevron*, judges do defer to the agency’s position in a case. This supports the litigant resources theory, but provides little backing for the legal model. One explanation needing additional research and coding is the Administrative Procedures Act and if judges use this statute instead of the Chevron decision. Future research looking at the ideology of the judges along with the direction of the opinion either for or against the
agency may help explain possible interaction effects of *Chevron* under the legal model and ideology from the attitudinal model.

As described above, upperdogs win a majority of the time. The federal government was the most successful litigant in three of the five statutes with businesses winning in the remaining two. This has implications for individuals and nonprofits pursuing cases in this area. If an individual or organization has very limited resources, their odds of prevailing in court as a party to a case are very small in most situations. For three of the five statutes, specific case provisions were helpful for underdogs, suggesting that targeted litigation may be a good strategy. It may also be beneficial for some underdogs to submit amicus briefs in support of a party with more resources. Additional research is needed to determine the effectiveness of briefs in this area, but the briefs require less of a resource investment than litigating a case and still allow the litigant type to express its perspective.

A second implication is the additional questions it raises about gender and race at the appellate level. Gender was significant in one statute: RCRA. Presence of a woman increased the likelihood of an underdog winning under RCRA, but this finding was not repeated in any other statute. Prior to this research, we did not have much data on what role, if any, gender played in environmental law cases. Now, we have data that invites additional research and a more in-depth analysis into distinctive features of cases in which underdogs won and there was a woman on the panel. There could be qualitative differences in the types of issues these statutes regulate and how the court interprets them or maybe the types of agency actions or provisions litigated.
changed from one statute to another. A closer evaluation of the opinions authored by female judges and of the panels with at least one woman is needed to understand how this indicator variable explains outcomes in this area of law and if the finding can be generalized to other environmental laws.

Presence of a minority justice was never a significant predictor variable and did not help explain underdog success. As the court has become more diverse since President Carter, expanding the dataset to more years and statutes may yield results in these statutes. Data limitations at this time restrict the conclusions that can be made based on the lack of significance.

For the legal model, the data in this dissertation supports the theory that case characteristics do matter. Excluding FIFRA and TSCA, statutory provisions were statistically significant in explaining underdog success in the statutes. While it could be argued that litigants with more resources can make stronger arguments for specific provisions and challenge more laws in one suit, the finding of case characteristics mattering suggests the letter of the law is important at the appellate level in environmental law in these cases and possibly other environmental laws as well.

When examining the control variables for ideology, neither panel ideology nor ideological distance was significant in any of the five statutes. The explanatory value of a judge’s ideology may also be more complex than the JCS scores used to measure it in this dataset. Other scholars have looked at interactions between ideology and a pro-environment or pro-business decision and this may better illustrate potential
influences of ideology in these environmental statues than using political ideology on a conservative-liberal scale as measured by the JCS scores.

Finally, this data provides the most support for litigant resource theory and is consistent with previous scholars who argued litigant resources could explain legal successes. Although underdogs prevailed in some instances, upperdogs won a majority of the cases. Having more resources correlated with winning more cases. Success of upperdogs varied depending on the statute, with some upperdogs such as businesses prevailing more often in FIFRA and TSCA cases, but in no statute did underdogs win more cases than more advantaged legal opponents. This could be a discouraging result for underdogs, but the few areas of underdog success offer some promise of prevailing in the courts.

**Future Research**

Moving forward, there are several areas I plan to expand. First, it would be valuable to code each statute for the entire time period it has existed and see if litigant success has changed over time. The CAA, for example, had two waves of significant amendments in 1977 and 1990 and these likely changed the legal landscape. Were underdogs more or less successful immediately after initial passage of the statute or after these reforms? With most of the statutes passed during the Environmental Decade of the 1970s, issue salience may have helped underdogs in the early years of the statutes and of the EPA. An in-depth analysis of EPA success over time could also
provide valuable insight into the agency’s legal strategies and involvement in the courts through cases and amicus briefs.

A more longitudinal approach would also help capture changes occurring on the circuit courts. Presidents Carter and Clinton appointed record number of minority and female judges to the bench and the current dataset only covers one of those notable presidencies. Gender was only significant for RCRA, inviting the questions of why only for this statute and why did it help underdogs to have a female judge on the panel? Race was never significant. Little research has examined judicial behavior of minority justices in environmental law, illustrating the need for more analysis.

A second planned expansion is looking more closely at amicus briefs. In this research, I measure whether a brief was submitted for either the petitioner or respondent. This was due to data limitations at the time, but restricted conclusions that could be made. The first step would be looking at which parties submitted briefs and who they supported. For underdogs facing limited resources, it is less of a commitment to submit a brief than party to a case. Are certain organizations or litigants more likely to submit a brief or join a case? Building on work by Collins (2007), the second step is looking at whether there is a point at which amicus briefs no longer help underdogs in environmental law. This could also be considered in a time-bound context and whether amicus briefs were more important in the beginning of a statute’s life or later after more precedents had been established. A third step is looking at the content of the briefs and specifically at the issues they raise. A comparison between the briefs and final majority opinions would be interesting. Do
judges use the language or content from the amicus briefs? Does this change over time as judges become more experienced in environmental law cases?

A third area to expand is forum shopping and if/how litigants do this. Anecdotally, practicing attorneys in this area of law discuss how they feel certain clerks, judges, or circuits are more likely to decide in their favor. When possible, they will file cases in multiple circuits to increase the lottery odds of having the case heard in a friendly one. Testing this claim empirically could help understand success of some litigants in particular circuits and whether this strategy actually works. Qualitative interviews with practicing attorneys and clerks would be the first step in this expansion followed by looking at specific case opinions. Does choosing a particular circuit or judge actually increase the odds of success?

A fourth area I would like to broaden the dataset to include is unpublished opinions. Until the access afforded by Public Access to Court Electronic Records (PACER), obtaining an unpublished opinion was logistically challenging and required trips to the courthouses. PACER has made unpublished opinions available, but remains cost-prohibitive without significant financial resources. Research by Ringquist and Emmert (1991) found differences in penalty severity between unpublished and published opinions and this could be one of many differences between the two opinion types. Westlaw and Lexis Nexis include some unpublished opinions, which were in the dataset for this research, but I was limited to only those included by the sites. A more comprehensive data collection would provide scholars with resources to better evaluate unpublished opinions.
Fifth, I would like to expand my research to include other statutes, specifically the Endangered Species Act (ESA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and the Safe Drinking Water Act (SDWA). The ESA is one of the few major environmental statutes whose jurisdiction is not under the EPA; the Department of the Interior, U.S. Fish and Wildlife Service, the Department of Commerce, and the National Oceanic and Atmospheric Agency (NOAA) are responsible for enforcement. With the EPA as the most successful federal litigant in the current data, it would be interesting to see what happens with litigant success when that agency is not directly involved. CERCLA’s liability regime and connection to RCRA make it an intriguing statute to analyze and the SDWA covers water challenges similar to the CWA. When added to the existing five statutes coded, a very comprehensive dataset on an understudied area of law would exist and be valuable for future scholars in the field.

Sixth, and finally, I plan to expand the administrative law portion of my research including coding for whether the Administrative Procedure Act (APA) was cited in the majority opinion and the type of action challenged in the case. *Chevron* was not cited to the extent I would have expected and specific attention to the APA and appealed actions may help explain this result.

**Overview**

This research provides a meaningful contribution to the both judicial politics and environmental policy and law. It is an original dataset bridging the two fields and
examining litigant success at the circuit court level. While not an exhaustive dataset, 566 cases from 16 years across five environmental laws is a solid foundation of research enabling unique analysis. Judicial scholars now have data on a previously ignored area of law and a better understanding of similarities and differences of behavior in this area as compared to others. Environmental scholars have information on how policies are interpreted within the legal system, but also a sense of the effectiveness of pursuing court cases. The dissertation bridges these two fields that traditionally do not speak to one another, hopefully informing both and making a meaningful contribution to the disciplines.
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### Appendix A: Variables, Measurement, and Hypotheses for the Dataset

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measurement</th>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chevron</td>
<td>1=Chevron cited in the majority opinion 0=Chevron is not cited</td>
<td>Chevron requires deference to agency decisions. Since underdogs are more likely to be challenging an agency action, this variable is expected to be negatively correlated with underdog success.</td>
</tr>
<tr>
<td>Case characteristics</td>
<td>1=case characteristic is present 0=case characteristic is not present</td>
<td>Every statutory provision is coded and sections litigated ten or more times are included. These are control variables.</td>
</tr>
<tr>
<td>Circuit location</td>
<td>Circuits 1–11 coded by the circuit number. D.C. Circuit coded as 12.</td>
<td>Wenner and Dutter 1988 note litigants at the district court level are more successful than others depending on the circuit. This variable will test those findings at the appellate level.</td>
</tr>
<tr>
<td>Litigant type</td>
<td>1=individual 2=nonprofit 3=business 4=state and local government 5=federal government</td>
<td>This variable is a typology of litigants and a proxy for resources. Starting with individuals (coded as 1) and moving up through nonprofits, businesses, state/local governments, and ending with the federal government-agency (coded as 5), this variable is expected to be negatively related to underdog success. As litigants have more resources, the underdog is less likely to win.</td>
</tr>
<tr>
<td>Panel ideology</td>
<td>The JCS score of the median justice is used for each panel</td>
<td>Sheehan, Mishler, and Songer (1992) and Songer and Sheehan (1992) argue panel ideology affects litigant success with some litigant types more likely to succeed than others depending on the panel’s composition. A liberal panel, using the judicial Common Space scores, will be more likely to rule in favor of the underdog.</td>
</tr>
<tr>
<td>Circuit ideology</td>
<td>Using data from Keele (2010), this is the median ideology of judges in the</td>
<td>Liberal circuits, as measured by Keele (2010) using the JCS scores, will be positively related to underdog success as found in Songer and Sheehan (1992).</td>
</tr>
<tr>
<td>Distance</td>
<td>The median JCS score of the panel is subtracted from the median JCS score of</td>
<td>This is a control variable for circuit ideology and strategic behavior.</td>
</tr>
<tr>
<td>Panel gender</td>
<td>0=no women on the panel 1=at least one woman on the panel</td>
<td>With women more likely to rule liberally, this variable will be positively related with the liberal outcome of underdog success.</td>
</tr>
<tr>
<td>Panel race</td>
<td>0=no minorities on the panel 1=at least one minority on the panel</td>
<td>This is a control variable for the effect of race on a panel.</td>
</tr>
<tr>
<td>Amicus brief</td>
<td>Coded as 0=no amicus briefs submitted or 1=one or more amicus briefs submitted.</td>
<td>Viewing amicus briefs as additional resources for resource-challenged litigants (Collins 2007) this variable will be positively related to underdog success.</td>
</tr>
<tr>
<td>CERCLA (for RCRA only)</td>
<td>0=no citation to CERCLA 1=citation to CERCLA</td>
<td>This is a control variable for RCRA cases.</td>
</tr>
<tr>
<td>Litigant</td>
<td>0=petitioner wins 1=respondent wins</td>
<td>This is a control variable used for the greater frequency of respondents winning appeals. In this dataset, it also controls for the federal government appearing most often as the respondent and winning a large number of its cases.</td>
</tr>
</tbody>
</table>
## Appendix B: Case Characteristics by Statute

<table>
<thead>
<tr>
<th>Statute</th>
<th>Case Characteristics</th>
</tr>
</thead>
</table>
| **Resource Conservation and Recovery Act**  | 6901—Congressional findings  
6902—Objectives and national policy  
6903—Definitions  
6921—Identification and listing of hazardous waste  
6922—Standards applicable to generators of hazardous waste  
6924—Standards applicable to owners and operators of hazardous waste treatment, storage, and disposal facilities  
6925—Permits for treatment, storage, or disposal of hazardous waste  
6926—Authorized State hazardous waste programs  
6928—Federal enforcement  
6941—Objectives of subchapter  
6972—Citizen suits  
6976—Judicial review  |
| **Clean Air Act**                            | 7401–7671—Provisions of statute  
7401—Congressional findings and declaration of purpose  
7409—National primary and secondary ambient air quality standards  
7410—State implementation plans for national primary and secondary ambient air quality standards  
7607b—Administrative proceedings and judicial review  
7607b1—Administrative proceedings and judicial review (rulemaking)  
7661c—Permit requirements and conditions  
7661d—Notification to Administrator and contiguous states  |
| **Clean Water Act**                          | 1251—Congressional declaration of goals and policy  
1251a—Congressional declaration of goals and policy: Restoration and maintenance of chemical, physical, and biological integrity of Nation’s waters; national goals for achievement of objective  
1311—Effluent limitations  
1312—Water quality related effluent limitations  
1313—Water quality standards and implementation plans  
1314—Information and guidelines  
1316—National standards of performance  
1317—Toxic and pretreatment effluent standards  
1319—Enforcement  
1319a—Enforcement: state enforcement; compliance orders  
1319b—Enforcement: civil actions  
1319c—Enforcement: criminal penalties  
1319d—Enforcement: civil penalties; factors considered in determining amount  
1319g—Enforcement: administrative penalties  
1328—Aquaculture  
1341—Certification  
1342—National pollutant discharge elimination system  
1342a—National pollutant discharge elimination system: permits |
<table>
<thead>
<tr>
<th>Federal Insecticide, Fungicide, Rodenticide, and Toxic Substances Control Act</th>
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<tbody>
<tr>
<td>136—Definitions</td>
<td></td>
</tr>
<tr>
<td>136aa—Registration of pesticides: requirement of registration</td>
<td></td>
</tr>
<tr>
<td>136vab—Authority of states: in general, uniformity</td>
<td></td>
</tr>
<tr>
<td>2601—Findings, policy, and intent</td>
<td></td>
</tr>
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Appendix C: Map of Federal Circuits

Geographic Boundaries
of United States Courts of Appeals and United States District Courts