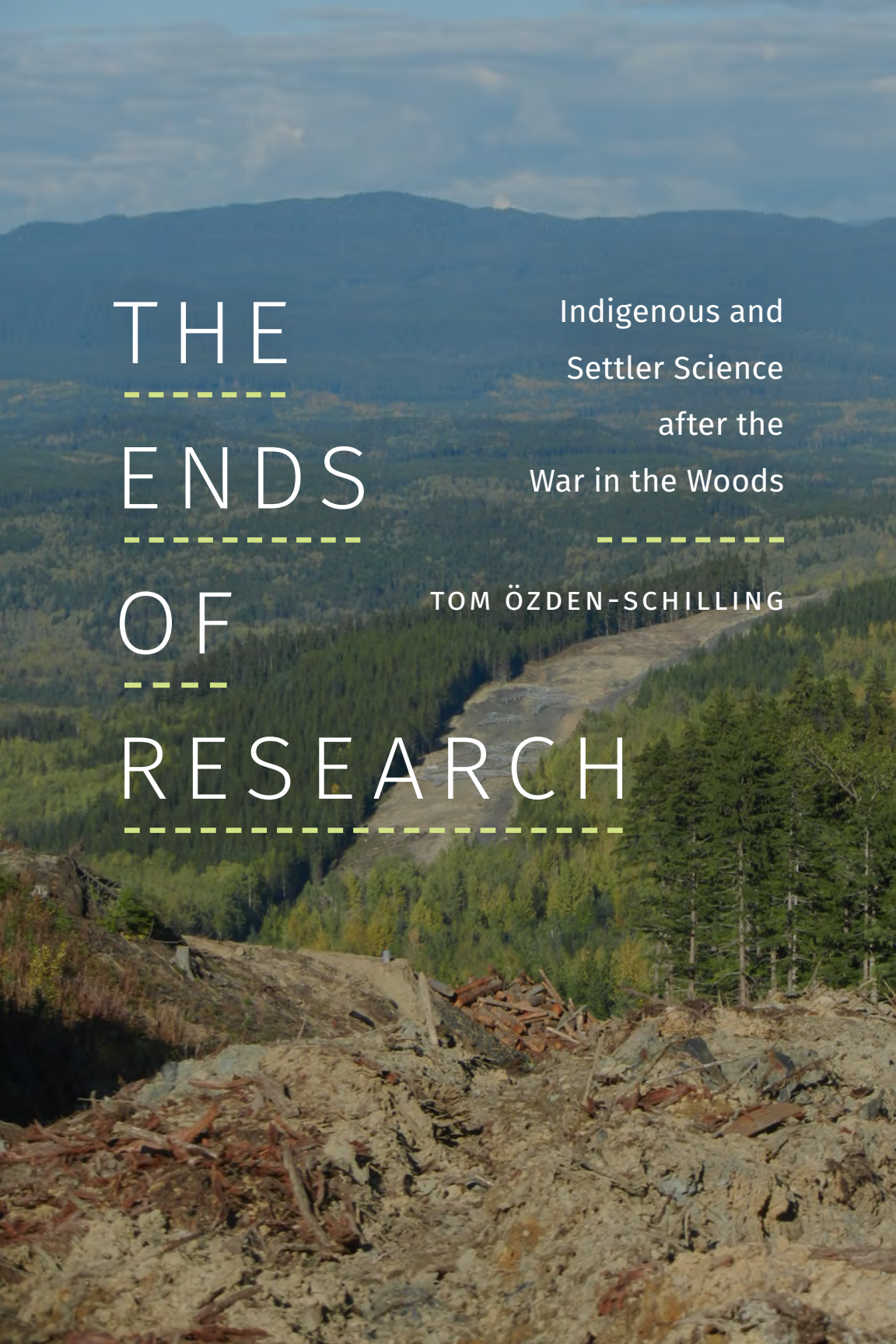

THE ENDS OF RESEARCH

Indigenous and Settler Science after the War in the Woods

TOM ÖZDEN-SCHILLING

THE ENDS OF RESEARCH

EXPERIMENTAL FUTURES
technological lives, scientific arts, anthropological voices
A series edited by Michael M. J. Fischer and Joseph Dumit

TOM ÖZDEN-SCHILLING

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Indigenous and Settler Science after the War in the Woods

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Cover art: A 100-meter-wide right-of-way through Gitanyow territory cleared for the Northwest Transmission Line. Photo by author.

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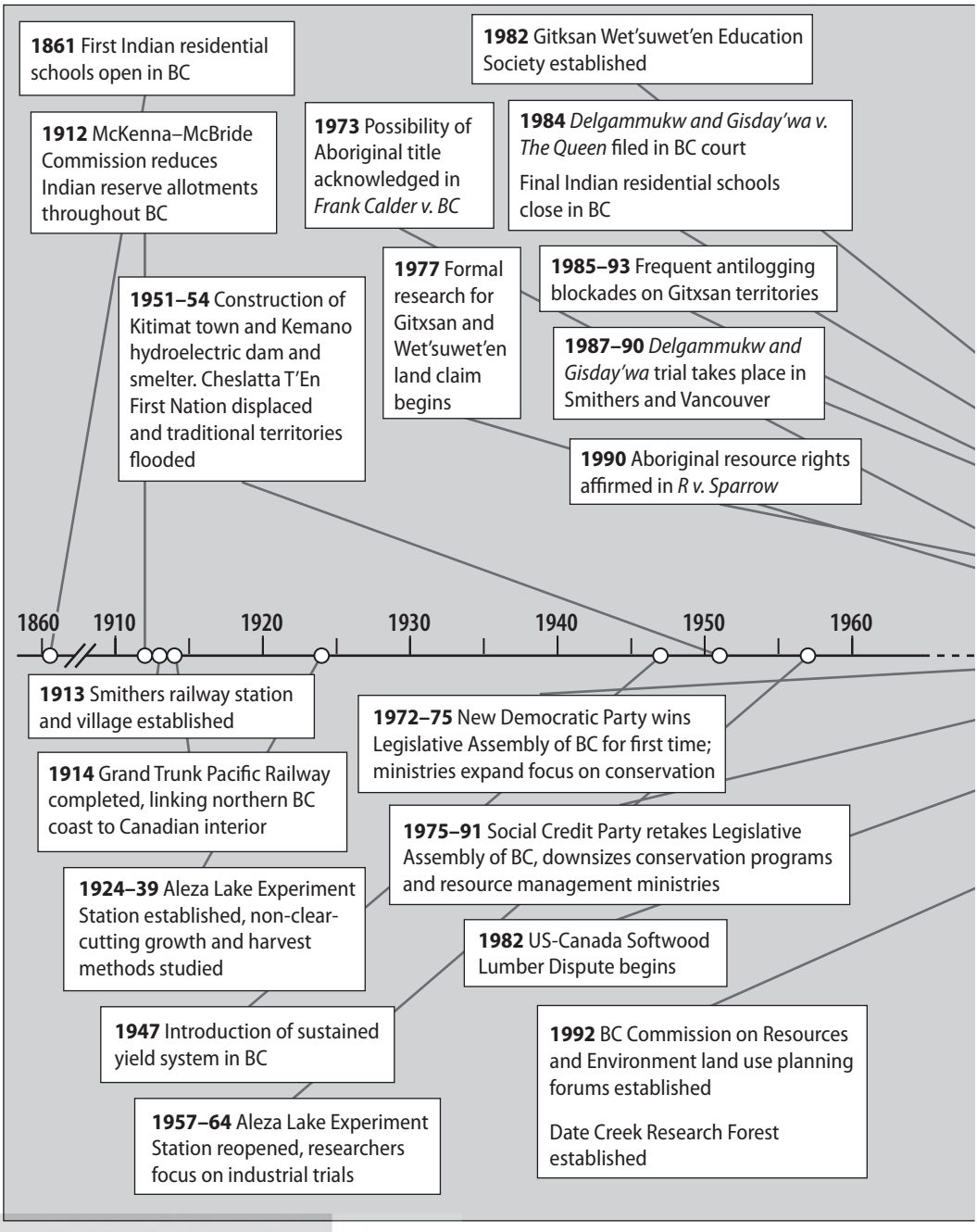
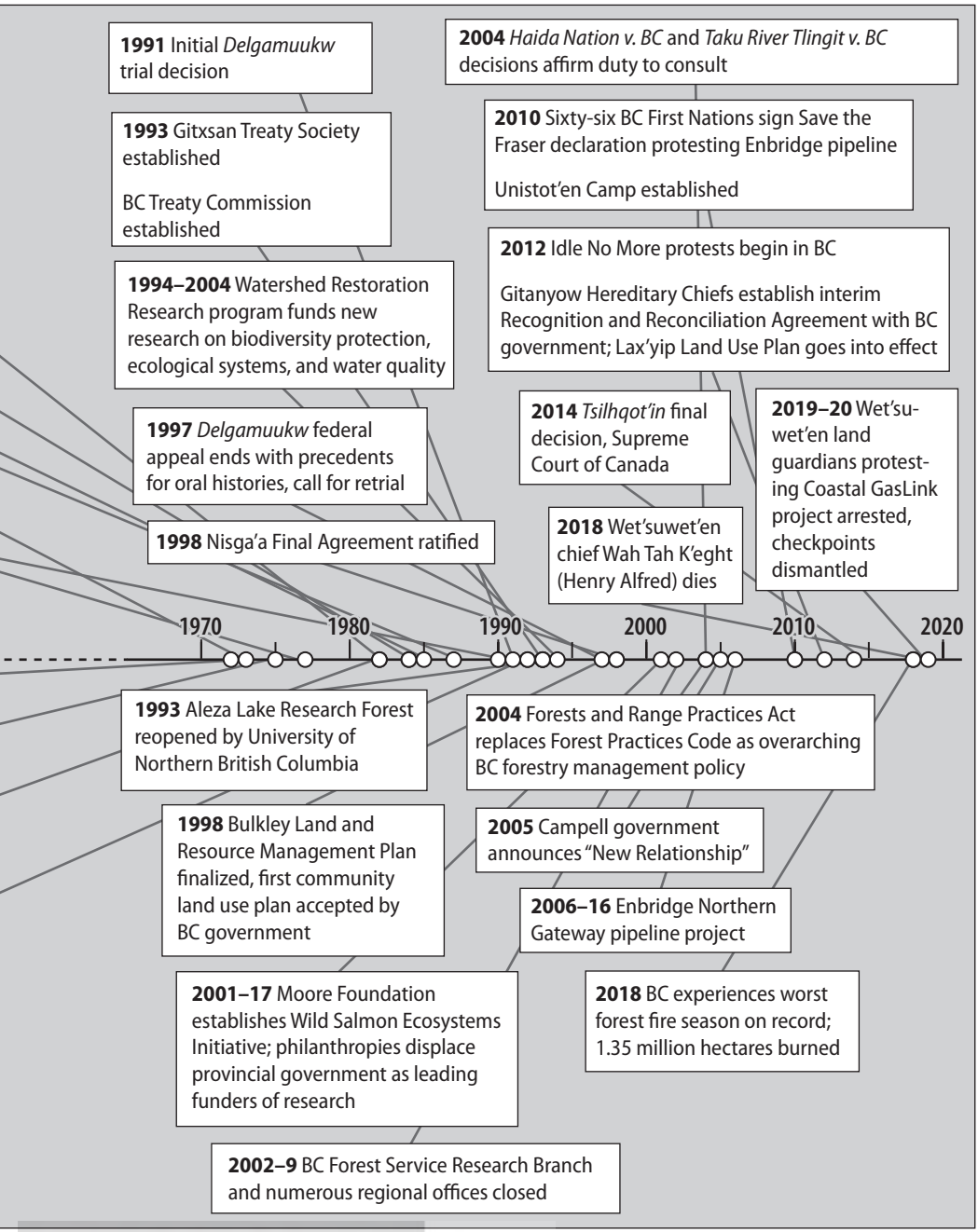


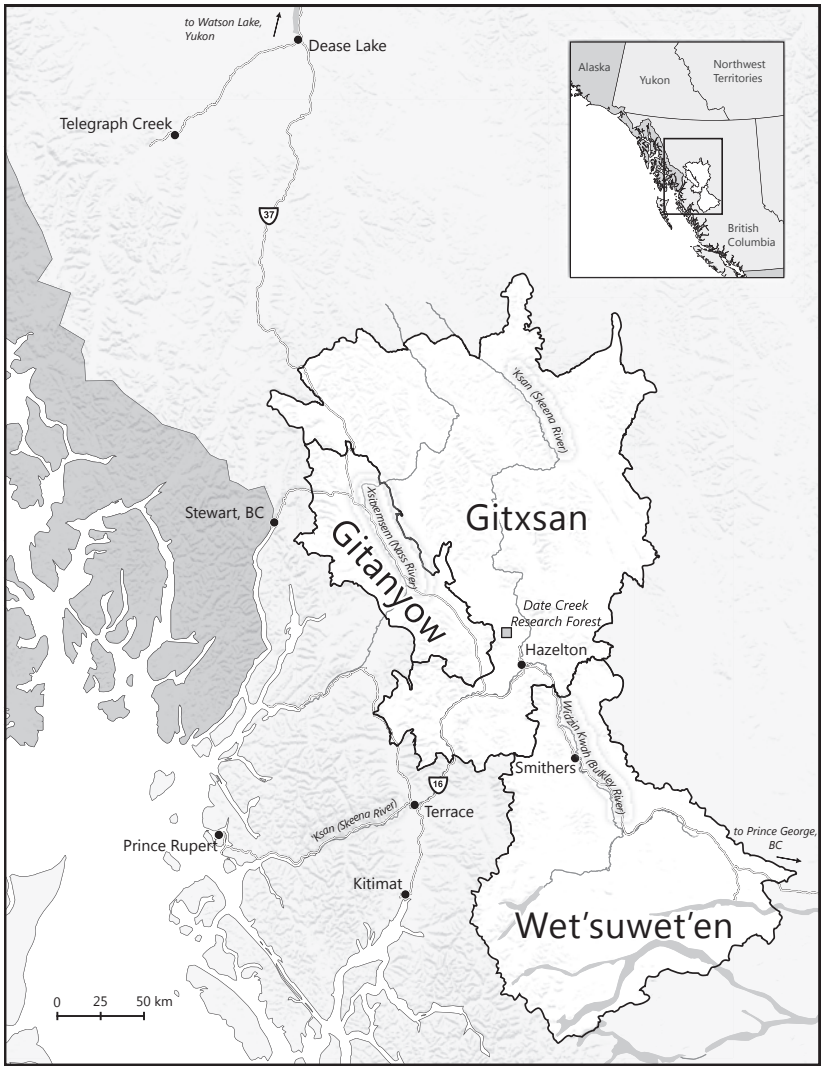


A NOTE ON THE MAPS

As this book argues repeatedly, any cartographic object should be treated with caution and care. This same warning applies to all of the maps displayed in this book, all of which were composed by Nicholas O'Gara from a complex array of sources. Lakes and rivers were downloaded from the US Geological Survey's (USGS) "North America Rivers and Lakes" website (United States Geological Survey 2022) and edited based on satellite photos from Google Maps. Hillshade and roads are based on data from the USGS 3D Elevation Program (United States Geological Survey 2021) and from the Government of Canada's National Road Network GeoBase Series (Government of Canada 2022b), respectively. The locations of populated places were downloaded from the Canadian Geographical Names Database (Government of Canada 2022a). Data for the original boundaries of the Bulkley Land and Resource Management Plan area, which were in effect from 1998 until 2006, were downloaded from the Government of British Columbia's "Bulkley Valley Sustainable Resource Management Plan" website (Government of British Columbia, n.d.). The borders of the Gitxsan and Wet'suwet'en traditional territories were georeferenced from images of the maps produced for the original *Delgamuukw and Gisday'wa* trial (Gitxsan Watershed Authorities, 2004; Office of the Wet'suwet'en, n.d.). The borders of the Gitanyow traditional territories are

based on the geographic information systems (GIS) shape files produced for the Gitanyow Lax'yip Land Use Plan (Gitanyow Hereditary Chiefs 2009).

The lines, points, and polygons depicted on these maps are meant to provide readers with visual heuristics for navigating the stories herein, but they are also meant to underline the diversity of the different kinds of claims that have been made on the landscapes of northwest British Columbia since the 1980s. Because the precise borders of the Gitxsan, Wet'suwet'en, and Gitanyow territorial claims have been subject to substantial legal debate and bureaucratic action, the boundaries of individual clan and house group territories for the three nations have been omitted. Readers should be aware, however, that all of these house group "boundaries" have longer and more established histories of recognition among Gitxsan, Wet'suwet'en, and Gitanyow people than the geo-bodies of any of the three First Nations as a whole (see Napoleon 2005; Thom 2009). Information on individual house groups is available on the maps and mapping resources cited above as well as in other documents cited throughout the following chapters.



MAP 0.1 Map of Gitxsan, Gitanyow, and Wet'suwet'en territories and surrounding region in northwest British Columbia. For an explanation of the relative positions of the borders of these territories, see A Note on the Maps.

PREFACE

In the final days of September 1988, a small group of Gitxsan people blockaded a bridge outside Kispiox reserve village in northwest British Columbia, Canada.[1] No non–First Nations traffic—and especially no logging trucks—would be allowed to cross the sole bridge linking the northern reaches of the Gitxsan traditional territory to the rest of the province.[2] Within hours, four additional Gitxsan blockades were established nearby. By the next evening, logging truck drivers and White residents from neighboring towns had begun gathering on the other side of the bridge, and armed police officers were arriving as well. The people who organized the initial blockade later admitted that they had no idea how long the standoff might last (Glavin 1990). The impetus for blockades, though, had been building for years. Hearings had recently begun in *Delgamuukw and Gisday'wa v. The Queen*, a lawsuit asserting ownership over 58,000 square kilometers of land in the region that the chiefs of the Gitxsan and neighboring Wet'suwet'en First Nations had been preparing for over a decade.[3] Time and again during the original trial, Gitxsan and Wet'suwet'en claimants had asked the government of British Columbia to halt industrial logging on the contested territories until the question of land ownership could be resolved in court. North of Kispiox Bridge lay the valleys of the upper 'Ksan (Skeena River) and its tributaries,

some of the few remaining forests in the rugged region yet to be subject to extensive clear-cutting. Repeatedly denied the opportunity to consult with the provincial government about the scale of these harvests or receive any royalties from subsequent sales, dozens of Gitxsan decided to halt the flow of timber away from their territories by themselves.

A few tense days after they began, the blockades were taken down. Almost immediately, however, political actors and journalists across North America began citing the confrontations as the Gitxsan First Nation's opening salvo in an antilogging revolution that had already come to span the entire Pacific coast (Glavin 1988; Campbell 1989). In the final decades of the twentieth century, more than one hundred blockades and other direct actions would eventually be carried out to protest the expansion of industrial logging in old-growth forests from Alaska to Northern California (Satterfield 2002). Among the myriad Indigenous and non-Indigenous groups to stage protests during this period, Gitxsan activists were perhaps the most prolific. Between 1988 and 1993, Gitxsan people organized dozens of road and railway blockades throughout northwest British Columbia (Blomley 1996). Some, like the blockade at Kispiox Bridge, lasted a few days. Others simply slowed the flow of passenger traffic, as Gitxsan men and women handed pamphlets to travelers driving on highways through their reserves. A handful of blockades stretched on for months, and temporarily prevented timber harvesters from accessing enormous regions of forested land. To many outside observers, the Gitxsan blockades transcended immediate questions over the ownership of particular territories. Rather, the conflicts extended and exemplified a continent-spanning battle over "nature" writ large: a northern front for the "War in the Woods" (Braun 2002).

This is not a book about blockades. To most Gitxsan activists, the headline-grabbing confrontations of the 1980s were simply continuations of long-running forms of resistance against colonial power—routine practices that had been heightened to keep concrete sovereignty demands visible while their chiefs were cross-examined in court (Galois 2007; A. Mills 2005; Monet and Skanu'u 1992; Sterritt 1989).[4] In the decades since, however, some Gitxsan have incorporated these labors of resistance into new technical initiatives and knowledge-making projects where they have encountered other kinds of activists—activists with different understandings of resistance, different concepts of survival, and different ideas about how the futures of the region's forests ought to unfold.

This book is about knowledge-making labor undertaken after direct conflict on the land. It is about how this labor, and the epistemic encounters

this labor engendered, eventually came to define the lives of the scientists and other researchers—both White and First Nations—who built lives in northwest British Columbia in the wake of the original War in the Woods. Yet it is also about the elusiveness of resolution, and the effects of conflict and yearning on individuals. The following chapters are about people whose investments in long-term ecological experiments and other technical projects, and whose senses of place and purpose, have become entangled in unending, ever-changing debates over the ways knowledge might legitimate political action.

Many of the watershed restoration and land defense projects established in northwest British Columbia at the end of the twentieth century are well known among conservationists around the world. In the first years after Gitxsan-led campaigns against resource extraction first came to be labeled as part of a Pacific coast–spanning "war," locally organized land use planning forums, forest growth experiments, and First Nations–led technical training and digital countermapping programs brought international attention and hundreds of aspiring researchers to northwest British Columbia. With a handful of the many First Nations researchers already living in the region, some of these new arrivals became internationally recognizable figures; several of their initiatives continue to be cited as groundbreaking achievements in global histories of ecological conservation and Indigenous activism. Almost immediately after most of these initiatives began, however, the government ministries that supported them radically shrank. New forest management policies swiftly reduced the authority of government scientists. Incipient First Nations treaty-making and development consultation processes stalled or unraveled. In the years since, most of the people who had hoped to devote their lives to these projects have had to reframe their research and their designs on power simply to make ends meet.

These trends are not unique to British Columbia. Throughout North America and in other settler colonial spaces across the world, landscapes surrounding protracted resource conflicts have played host to a wide range of experiments in science-based governance—a range of experiments that grew rapidly during the final years of the twentieth century (Nadasdy 2003; Whyte 2013; Z. Todd 2014; Neale and Vincent 2017; D. E. Powell 2018; Cattelino 2019; Liboiron 2021). Such experiments have been designed with many different goals in mind. In some, organizers have sought to mollify resistance to specific extractive projects by inviting skeptical residents into new participatory forums, or by attempting to depoliticize debates over the ecological effects of these projects through new configurations of technical

media. In others, researchers have leveraged government and corporate funds made available in the name of "conflict resolution" to generate new tools for land-based activism. Regardless of their original aims, however, many of these experiments have found prolonged and unruly afterlives amid the uncertainties of government downsizing. Particularly in rural areas like northwest British Columbia, many of the White and Indigenous researchers who have invested time and meaning in these initiatives have seen their own roles as neighbors, experts, and kin change, as well. Yet together, these people and projects have persisted. By exploring how research and researchers have remade one another in the long shadow of the War in the Woods, this book raises new questions about the entangled afterlives of conflict and science-based governance. What part of a project, an expert identity, an aspiration, or collaborative relationship "survives" amid perpetual change?

Each of the following chapters focuses on a facet of rural researchers' social and professional "survival" that has been unsettled by government downsizing: prominent forestry scientists retiring without successors to carry on decades-long studies; First Nations capacity-building initiatives designed to train local cohorts of Indigenous technicians collapsing for want of funds; tense negotiations over the roles that corporate-funded data collection projects might play in the futures of collaborative activism. Treating these transitions as intimate processes of social reproduction, the book shows how new concepts of inheritance, nostalgia, resilience, and extinction have come into use among White and First Nations researchers who see the future health of the region's forests as interwoven with the continuance of their careers. Each chapter also examines specific planning documents, Indigenous territory maps, and other technical artifacts produced through these initiatives, and explores how such artifacts have served researchers as vehicles for surviving institutional restructuring. For many researchers, the relationships that have cohered around these artifacts have become crucial spaces for imagining futures beyond their transient institutional arrangements, beyond settler colonial extractivism, and beyond the War in the Woods. Taken together, these researchers' stories highlight the creative forms of labor required to sustain practices of inquiry when both landscapes and social formations are in flux.

To be clear: White and First Nations researchers have experienced government downsizing in different terms. Many have also articulated the meaning and stakes of continuance in different registers as well. Each of the following chapters, then, shows how specific research and documentary practices have persisted alongside particular modes of reflecting on these

practices and narrativizing them within other accounts of individual and collective life. Part of the purpose of this book is to show how this twinned attention to acts and accounts of continuance might be useful in other anthropological studies of science and technology. Indigenous literary scholars have been refining similar frameworks for decades. Over the course of his career, Anishinaabe (Minnesota Chippewa Tribe, White Earth Reservation) author and literary theorist Gerald Vizenor developed the term "survivance" to describe the acts and modes of reflection through which Indigenous individuals negotiate the legacies of colonialism in their everyday lives. These practices and accounts are rarely heroic, Vizenor insists, but neither are they grim or despairing. Survivance is more than mere survival; like the figure of the shape-shifting bear that often emerges in Vizenor's literary work, survivance encompasses situated responses that can be simultaneously ironic, violent, and playful (see Vizenor 1990, 1994). As such, acts of survivance are often indirect in their effects. Like many of the long-term research practices described in the following pages, these acts are also replete with moral ambiguities and potential complicities. Throughout his scholarly and literary writings, Vizenor expresses a deep suspicion of totalizing answers to colonial violence and its myriad political and affective legacies. "The ironic fullness of original sin, shame, and stigmata want salvation, a singular solution to absence and certain victimry," he writes. "There is a crucial cultural distinction between monotheism, apocalypticism, natural reason, and native survivance" (2008, 18). Practitioners of survivance, Vizenor's writings make clear, know that the work of resistance is ongoing, and that it must be made to continue even as projects change form and individual practitioners depart.

This book is not about how experts and expert knowledge become implicated in resource politics, land disputes, or other engagements with power. Survivance, as I interpret it throughout the following chapters, is simply a method for making collaborative life in the face of continual disruptions. By focusing on White and First Nations researchers' attachments rather than on the rise and fall of specific institutions or projects, this book challenges prevailing anthropological approaches to expertise by asking how researchers' lives come to matter within rural histories of conservation and extractivism. This approach is particularly urgent in zones of Indigenous and settler colonial conflict, where understanding how individuals' lives and aspirations come to shape collective projects remains crucial to understanding how such projects reshape individual lives in turn, particularly as prevailing livelihood strategies and policy regimes undergo continual change. As I describe in

the epilogue, the arrests of dozens of Wet'suwet'en antipipeline activists in northwest British Columbia in early 2020 initiated hundreds of Indigenous-led blockades that effectively shut down Canada's rail and maritime shipping infrastructures for nearly a month. Much like the earlier blockades against industrial forestry, the ways that contemporary activists articulate new challenges to extractivism will echo long past these initial moments of confrontation; some challenges will eventually be woven into the fabric of activists' lives. In the meantime, the stories that fill the following pages—stories about finding meaning in lives devoted to research—may yet offer clues about the kinds of challenges young activists might encounter as they persist with their work in the face of unceasing change.

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This book bears the fingerprints of hundreds of generous souls. Since first beginning ethnographic work in British Columbia in 2011, I have found a remarkably welcoming community there, particularly in and around the town of Smithers. Yvonne Lattie and her family, Bridie O'Brien, Neil J. Sterritt, Kenny Rabnett, Doug Donaldson, Amanda Follett, Phil Burton, Taylor Bachrach, Russell Collier, John Ridsdale, Daryl Hanson, Roger McMillan, Don Morgan, Rick Budhwa, and many others all helped me to find my bearings and get myself entangled in the joys and dramas that come with small-town life. Perhaps more than any other single individual, Richard Overstall helped to connect me with many of the people who became my primary interlocutors. Richard also helped to demystify the dense and complicated recent history of the Bulkley Valley for me during long, patient conversations. My first hosts in Smithers, Tracy and Bill McIntyre, emphatically made me part of their family throughout my time in the northwest, and helped me to feel like I had known them, their friends, and their neighbors for years. Darlene Vegh and her husband, Gary, as well as Dave Coates, Sybille Haussler, and Johanna Pfalz, have welcomed me back to the region multiple times, and have helped to turn the entire research and writing process into a sustained labor of love.

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and Technology Studies Circle and, later, the Weatherhead Center for International Affairs at Harvard University; the Humanities Research Center at Rice University; the Department of Anthropology at Durham University; the Department of Sociology at Koç University; the Humanities, Arts, and Social Sciences faculty at the Singapore University of Technology and Design; the College of Environment and Natural Resource Management at Cần Thơ University in Vietnam; the Engineering, Design, and Society program at the Colorado School of Mines; the Department of Anthropology at the University of Wyoming; the Undergraduate Anthropology Club at the University of Arkansas at Little Rock; and the Department of Sociology and Anthropology at the National University of Singapore.

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Several of the following chapters contain revised versions of material that has previously been published elsewhere. Brief selections of chapter 1 and the introduction originally appeared as an article in the *Journal for the Anthropology of North America* (Özden-Schilling 2019a); portions of chapter 4 were published as an article in *Anthropological Quarterly* (Özden-Schilling 2019b); and portions of chapter 5 were published as an article in *American Anthropologist* (Özden-Schilling 2022).

Introduction

"Who won the War in the Woods?" For ten long seconds, my words hung in the air. Our pickup truck was still a few minutes from reaching the maze of rutted logging roads that would take us the final twelve kilometers to the Date Creek Research Forest, where we would spend yet another day measuring trees. Like many early morning trips we had taken up to the research forest that summer in 2013, the three other researchers in the truck with me had spent much of the drive staring out their windows, slowly willing themselves awake. Kristen, a soil scientist-cum-ecologist, and Sanjit, a computer modeling specialist, were employed by an independent research center in the town of Smithers, a small mountain town that served as northwest British Columbia's administrative center.[1] Dennis, the driver of the truck, was a senior research scientist with the BC Forest Service and had been conducting experiments on tree growth and species succession in Date

Creek for more than two decades. Individually, each of the three maintained their own experiments throughout the region's vast forests, but they still periodically helped each other gather field measurements on long-term projects, particularly at the height of summer, when the light lasted for nearly eighteen hours each day.

Spending long summer days in the company of collaborating researchers, I slowly came to appreciate the productive effects of two different kinds of shared silence. As we worked together to identify, count, and measure trees in the field while navigating densely packed undergrowth, we learned each other's habits through repetitive physical acts, even as we often went many minutes at a time without speaking. During our hours on the road to and from field sites, meanwhile, the views alone discouraged idle chatter. As we drove north toward Date Creek each morning, the Bulkley River roared alongside the highway, the aspen groves crowding its banks giving way to dense spans of hemlock, pine, and western red cedar as the long, wide Bulkley Valley sloped northward before beginning to curve toward the west. The peaks of the Coast Mountains rose and fell on all sides, first Hudson Bay Mountain and the Babine Range as we pulled away from Smithers on the Trans-Canada Highway, then the towering walls of Rocher Déboulé as we crossed the Bulkley River on a slender suspension bridge, high above Hagwilget Canyon. Slowly, I was beginning to learn older names for these places as well. Ts'edeek'aay and Widzin Kwah on the Wet'suwet'en territories. Stegyawden and 'Ksan on the Gitxsan territories. Along the walls of each valley, bright green swaths of second-growth forest betrayed the locations of sprawling clear-cuts from the 1970s and '80s, before laws restricted the maximum size of new cutblocks in the region to sixty hectares each (Beese et al. 2019). To tourists who traversed the region in search of hiking trails or places to fish, the valleys might have appeared to be filled with unbroken forests. As I came to know more residents of the region who had joined anti-clear-cutting blockades decades earlier, I grew accustomed to hearing these juvenile tree stands described as "fading scars."

"The War in the Woods," I was often told, was a historical term. To many of the environmental scientists I had come to know in Smithers, the phrase described an earlier era, when confrontations between Gitxsan and Wet'suwuet'en First Nations activists and the logging companies that harvested timber on their territories regularly shut down the Trans-Canada Highway and the railway that ran alongside it. Most described what they knew of the blockades through reference to *Delgamuukw and Gisday'wa v. The Queen*, a precedent-setting land claim that Gitxsan and Wet'suwet'en

chiefs had filed together in 1984. Among the Euro-Canadian scientists who had made their homes in northwest British Columbia since the beginning of the twenty-first century, I typically heard the *Delgamuukw and Gisday'wa* trials and the blockades of the 1980s and '90s framed in epochal terms, as one chapter—albeit a critical one—in a celebrated chronicle of regional activism. With other interlocutors, though, references to specific moments from the blockades drifted into everyday talk. A few days after I had attended a rodeo in the Kispiox Valley, a Gitxsan friend casually mentioned that the bridge that I had crossed on my way there had been the site of one of the first major standoffs between police and Gitxsan activists. Her brother, she remembered, had been one of the first Gitxsan to arrive at the bridge, before White loggers began arriving with guns.

Like many researchers who had come to call Smithers home during the 1980s and '90s, Dennis had developed much of his career in the shadow of the War in the Woods. He had secured the original funding for the research forest at the height of the blockades, during a spate of new provincial government initiatives designed to support research on alternatives to industrial forest harvesting techniques. He had assembled the original plan for his experiments at Date Creek in conversation with the Gitxsan chiefs whose territories converged there, and he had had periodic conversations with the same chiefs and their successors in the decades since. Dennis's wife, Pauline, a botanist, had even served as an expert witness on behalf of the Gitxsan during the *Delgamuukw and Gisday'wa* trials. The couple had spent most of their lives in Smithers, hunting for grants and research contracts while cultivating collaborations with other scientists living nearby. The labor of building continuous careers in the region had thickened their ties with people and places there, albeit in ways that sometimes proved difficult to describe. Occasionally on our morning drives, Dennis would point out specific features of the landscape—the site of an abandoned Forest Service experiment; a hiking trail he had explored years earlier with his daughter. He always chose his words carefully before answering my questions about the memories and experiences he had accumulated in the region, but he always came up with an answer. When I asked him who had "won" the War in the Woods, though, he simply smiled and glanced toward the back seat of the truck, where Kristen and Sanjit sat quietly.

Kristen and Sanjit returned Dennis's gaze: they were waiting for him to answer too. "I guess nobody really won," Dennis offered after a long pause. "It was an awfully long time ago." Another minute of silence passed. Over the course of the summer, Kristen had occasionally followed my ponderous

questions with her own questions for Dennis. Which Gitxsan chiefs had been most interested in selective logging when Dennis first established the research forest? How might we format the data we were gathering that summer to make it easier to share with other researchers, including the growing contingent of botanists who were coming to Date Creek to study how climate change affected specific plant species? What had it been like to tour the forest with politicians, when the blockades were making international news? Over the decades, Dennis had recruited an idiosyncratic cast of collaborators to help him keep up with his long-term experiments at Date Creek and elsewhere throughout the region. It was Kristen, though, whom Dennis hoped that the BC Forest Service might hire to take over his position when he retired in a few years. Like me, she was curious about how Dennis's life had informed his work, and vice versa. Far more attentive to her mentor's quiet demeanor, though, she also seemed to know when to let certain topics rest.

As the pickup began the long climb to the research forest in the foothills of the Kispiox Range, Kristen finally spoke up. "But blockades are still happening." Dennis nodded silently, and kept his eyes on the road. Throughout the morning, on signs nailed to fence posts and telephone poles, we had seen dozens of messages denouncing a proposed liquid natural gas pipeline set to bisect the Gitxsan and neighboring Gitanyow territories. South of Smithers, members of the Unist'ot'en Clan of the Wet'suwet'en First Nation had already been running a camp and checkpoint for several years to prevent surveyors working for yet another proposed pipeline from performing technical work on their territories (Spice 2018; McCreary and Turner 2018). Marches were still being organized in Smithers and neighboring towns in concert with the Idle No More movement, a wave of Indigenous-led protests originally organized in response to proposed rollbacks in environmental assessment procedures that had begun sweeping through Canada the previous winter.[2] As we waited for Dennis to share his thoughts about how these earlier conflicts might be informing the present, though, he began talking about the other experiments he hoped we could check on later in the summer, once the main tree measurement survey was complete. It had been five years since he had last gathered data on wind damage within Date Creek, he remarked, and he hoped to revisit the study before snow began falling in September. As the truck fell silent again, Dennis insisted that he hadn't forgotten my question. "I'll keep thinking while we're out in the field today," he promised. "But I'm not sure how much more there is to say."

Slowing down as we approached the turnoff for the logging road that would take us to the research forest, Dennis reached down for his CB radio

to let the Forest Service dispatcher know that we had left the highway before tuning the radio onto a local frequency. For the next half hour, we would listen for warnings of oncoming logging trucks descending south from new cutblocks farther north along the Skeena River. Bracing myself against the dashboard as the pickup lurched from the asphalt road onto gravel, I caught a glimpse of the steel girders of Kispiox Bridge, just a few dozen meters away.

Six years later, in 2019, I found myself in a house on another gravel road high above the Skeena River, ten kilometers away from Date Creek. Darlene Vegh, a Gitxsan and Gitanyow woman, was listening for logging trucks too. "That's the third one this morning," she grumbled as another rumbled past. "It's too late for them to be going up there. The ground is too soft." We tried to focus on the map she had just unfolded atop her kitchen table, but the distraction lingered. Early March used to be part of the regular logging season, she reminded me, but spring had begun coming earlier, and much more suddenly, since she and her husband had built their house in the Kispiox foothills in the early 1990s. The previous week, the temperature had hovered at 30°C below zero. Today it was plus 15°C. Two-meter-tall piles of plowed snow lining the sides of Vegh's driveway seemed to be melting before our eyes. "Those guys are probably coming from those new cutblocks near Kispiox Peak," she surmised as we returned our attention to the map. "They must be desperate if they're going so high up in the mountains to find wood, eh? Maybe we ought to drive up there this afternoon to check it out."

At the height of the War in the Woods, inspecting harvesting plans and confronting loggers on the Gitxsan traditional territories had been Vegh's full-time job. She had been a founding member of the Gitxsan Strategic Watershed Analysis Team, or SWAT, and had helped to design and implement the first procedures for government-mandated negotiations between logging companies and the Gitxsan *huwilp*, or house groups, whose chiefs had been claimants in the *Delgamuukw and Gisday'wa* trials. She and her SWAT colleagues had been early proponents of computer-based geographic information systems (GIS) mapping and had worked actively to turn the trail mapping and land cover data they gathered for the consultation process into a new infrastructure for Gitxsan-led research. The most famous artifact of SWAT's work was something I often saw printed on posters throughout the region: an exquisitely detailed digital map of the Gitxsan territories. On the paper printout of the map we examined that morning in March, hundreds of

Gitxsan place-names adjoined the Euro-Canadian names of towns, peaks, and rivers throughout the region. When I had first met Vegh in 2013, the layers of data that made up the map had already been serving as a foundation for the work of Gitxsan planners and politicians for over a decade. Vegh herself had worked from these layers whenever she assembled studies for individual house groups, as well as earlier in her career, when she worked for the Gitxsan First Nation writ large.

Six years earlier, Vegh had invited me to join her on a mapping project to inspect an alternative route for a proposed natural gas pipeline set to cross Gitanyow territory—her last professional field project, as it turned out, before she retired. The modest mapping project had been paid for by the TransCanada Pipeline (TCP) Corporation (now TCP Energy), the developers of another pipeline project south of the Gitanyow territories that had inspired Wet'suwet'en land defenders to establish checkpoints to block TransCanada employees and contractors from entering their territories (see epilogue). Keeping track of ecological changes on the land and pursuing other long-term stewardship and teaching goals through developer-funded contract work had exposed Vegh to new kinds of tensions between activists, elders, and other political leaders, she had reflected at the time, but her earlier projects carried complex complicities too. As we met at her home in 2019 to discuss the reception of her report on the Gitanyow project and to catch up on what had happened in our lives since, our conversations veered between stories about previous mapping expeditions and musings about new conflicts percolating nearby. Earlier in the week, she and her husband had driven up the road to bring food to a group of Gitxsan who had been running a small antilogging blockade throughout the winter. The previous chief of the territories in question, Vegh remembered, had been a vocal supporter of SWAT's projects in the 1990s. Revisiting the same territories as a recent retiree, though, had reminded her how much of SWAT's work had been left unfinished after the group's funding had disappeared.

First Nations mappers and scientists were supposed to have been saviors, Vegh reflected, but she still wasn't sure what their work had meant. "It feels like a lot of us were finally getting recognized as experts right when the government stopped caring about science." When I suggested that the status of research and researchers in the region might change if a new War in the Woods were to erupt, Vegh looked out the window and smiled. "Maybe you're right. It'd be funny if journalists start calling it that again," she sighed.[3] "It's pretty obvious to the folks who live up here that the conflicts never really stopped." In the meantime, though, she hoped younger

mapmakers would take over tracking changes on the territories, even if they, too, could never know for certain what the legacy of their labors would be.

A War's Ends

Throughout the second half of the twentieth century, individual researchers and their respective institutions played diverse and sometimes contradictory roles in narrative accounts of forestry conflicts. To many Canadian and American commentators, the surging visibility of First Nations sovereignty demands and the increasingly confrontational tactics of White conservationists throughout coastal forests during the 1980s and '90s were symptoms of a global shift in extractivism. The conflicts that arose around old-growth forests, a diverse range of critics argued, were the direct consequence of "sustained yield" forestry planning: a massive, coordinated approach to clear-cutting and replanting trees (Braun 2002; Hayter 2003; Prudham 2005). Introduced to British Columbia by the BC Forest Service in 1947, the government researchers who designed the sustained yield system sought to replace the diverse range of planting and harvesting programs that had been developed there over the first half of the twentieth century with a simplified regimen, one capable of bringing the province's entire landbase into a single harvesting schedule (Orchard 1953; Prudham 2007). Shortly after the introduction of timber sale harvesting licenses in 1967 allowed licensees to consolidate cutting rights into larger and longer-term contracts, the dozens of independent operators that had previously constituted the industry were quickly consolidated into a handful of massive firms. By the 1970s, the subsequent expansion of the sustained yield system had helped to turn British Columbia into the largest single exporter in the Pacific Rim timber trade.[4] As the United States, British Columbia's largest export market, began imposing tariffs on BC lumber in the early 1980s, the need to find even cheaper sources of wood drove logging companies ever farther north, and ever deeper into old-growth forests.[5]

If the work of conventional forestry scientists and planners had led the province into the War in the Woods, a rising class of provincial politicians charged a new generation of researchers with devising a way out. In September 1991, three years after the initial Gitxsan blockade at Kispiox Bridge, the New Democratic Party (NDP) won control of the Legislative Assembly of British Columbia for the first time in nearly two decades. Promising to address the spiraling tensions surrounding First Nations land claims and

industrial logging in old-growth forests, newly elected premier Mike Harcourt initiated far-ranging land use and governance reforms. Within a year, NDP appointees had reorganized the BC Ministry of Forests and increased its administrative control over commercial timber harvests. By the middle of the decade, the Harcourt government had begun establishing "community-based" land use planning forums in towns throughout the province, and substantially expanded the total land area protected within the provincial park system (Tollefson 1998; Giesbrecht 2003). In areas of the province where anti-clear-cutting protesters had been especially active, the provincial government empowered its Forest Service and Ministry of Environment to establish new research forests to study selective tree harvesting methods and watershed restoration processes (Davis 2009). At all levels of forest policy and administration, NDP officials promised, scientific researchers and original research would play crucial roles in mediating future conflicts.

Whether or not their members participated directly in any blockades, many First Nations experienced the War in the Woods as a period of rapid bureaucratization. In 1993, the Harcourt government formed a centralized commission for negotiating treaties in the hopes of discouraging other First Nations from pursuing their land title claims through provincial courts. By the middle of the decade, nearly half of the 203 federally recognized Indian band governments in the province had applied for government loans to begin their own treaty research (BC Treaty Commission 2021). Meanwhile, the BC Forest Service and other provincial government ministries began formalizing new consultation procedures for logging companies, mine operators, and other resource developers working on land subject to treaty claims. For First Nations groups like the Gitxsan that vested decision-making power in clans, house groups, and other hereditary institutions rather than in the federally administered band government system, the pressure to participate in treaty negotiations compelled them to establish entirely new bureaucratic institutions. By the end of the 1990s, the Gitxsan Treaty Society (GTS) had expanded beyond its initial role as representative for the more than eighty house groups of the Gitxsan First Nation officially participating in the treaty process.[6] As chiefs and researchers who had participated in the first *Delgamuukw and Gisday'wa* trial were regrouping for a provincial and a later federal appeal, the GTS established its own forestry consultation office, mapping division, and development corporation (Barry 2012). Rather than relying on Euro-Canadian experts to staff these new offices, however, the GTS joined dozens of other First Nations throughout the province in pressuring the provincial government to support their efforts to train their

own experts (Ryan 2005). If future Gitxsan encounters with the state were to depend on the authority of science, Gitxsan leaders argued, then the Gitxsan would need their own researchers leading the way.

Almost as soon as they had begun, nearly all of the research-based governance and capacity-building initiatives established during the War in the Woods were radically scaled back. In 2001, the BC Liberal Party won control of the Legislative Assembly of British Columbia. Gordon Campbell, a Liberal member of the Legislative Assembly (MLA) who had actively campaigned against any negotiations with First Nations groups over land claims and had even launched an unsuccessful lawsuit against the recently completed Nisga'a Final Agreement, was elevated to the position of premier. Accusing First Nations litigants and other negotiating parties of damaging the province's rapidly expanding resource economy, the Campbell government launched a province-wide referendum seeking to undermine the BC Treaty Commission (BCTC) and absolve provincial ministries of their duties to negotiate with First Nations over proposed developments (Rossiter and Wood 2005).[7] Further insisting that the rising power of conservationists both within and outside the government had created an unfriendly climate for logging companies, Campbell also began dramatically downsizing all of the provincial government's resource management ministries.[8] Within months, the central Research Branch of the BC Forest Service, one of the most prestigious government-run forestry science centers in the world, began closing down, as most of its researchers were either laid off or reassigned to other Forest Service divisions. By the year's end, more than two-thirds of the satellite Forest Service offices throughout the province had been closed as well. As the new government began dismantling the research and capacity-building initiatives begun by the NDP, financial support for the salaries and research expenses of newly trained First Nations experts disappeared as well.

Hundreds of individual researchers' lives and careers were unmoored as the new century began. To some distanced observers, however, the progressive tenor of NDP-authored policy experiments seemed to be reestablishing itself almost as quickly as it had been swept aside. By the middle of the decade, the outright hostility that characterized the BC Liberal Party's rise to power had been softened through a range of conciliatory gestures. Perhaps wary of the negative publicity that his antagonism toward First Nations land claims would create as Vancouver prepared to host the 2010 Winter Olympics, Gordon Campbell dramatically shifted his stance on treaty-making and consultation during his second term as premier, and even vocally challenged the Stephen Harper–led Conservative federal government for disrupting

provincial efforts to negotiate new agreements (Wood and Rossiter 2011). During the early years of the BC Liberal government's so-called New Relationship, Campbell's engagements with the BC Assembly of First Nations and other province-wide First Nations governing councils were further propelled by the premier's sober reckoning with decisions by the Supreme Court of Canada chastising the provincial government's failure to consult the Haida and Taku River Tlingit First Nations over proposed forestry and mining projects on their claimed territories (Olynyk 2005).[9]

Over time, the economic landscape of conservation-oriented research shifted as well, and new sources of support emerged. To some of the scientists I later interviewed at BC Forest Service headquarters in Victoria, the dramatic shifts initiated by the BC Liberal Party in the early 2000s were merely part of a longer cycle of institutional reorganization. Many of their colleagues in the capital city were regularly shifting between government and industry jobs during the period, they reminded me, and other federal and provincial initiatives designed to support First Nations job training and capacity building, particularly in the mining industry, emerged not long after the War in the Woods–era programs were canceled. By the end of the decade, conservation NGOs and other civil society groups supported by private philanthropies were already outpacing the BC government as the most significant funders of environmental research in the province (see chapter 5).

By the time Campbell's vaunted New Relationship and the rise of private research funding had begun to impact the work of many of my interlocutors in northwest British Columbia, their lives and aspirations had already changed. For researchers and activists working to transform the knowledge and relationships they had built through direct action protests into more durable infrastructures for governance, the temporalities of institutional restructuring manifest not as predictable cycles, but as sudden strains on their interpersonal bonds. These strains affected White and First Nations researchers in starkly different ways. After the regional Forest Service office in Smithers was closed in 2002, many government researchers were reassigned to new positions in the provincial capital. Others simply quit or lost their positions and began working as contract-based researchers, joining the dozens of consultants already living in the region. As the Gitxsan-led technical training programs were canceled and budgets for consultation offices were scaled back in 2001, many Gitxsan either moved back into logging jobs or left the region in search of new work suitable for their burgeoning technical skills. For some Gitxsan, the relationships that they had begun to build with non-Indigenous environmental scientists began fading as nascent collaborative

projects—initiatives for cataloging medicinal plants, joint studies of watershed restoration techniques, and a Gitxsan-run berry harvesting cooperative, among others—saw their funding suddenly disappear.[10]

In different ways, Darlene Vegh and Dennis both described the vast patchwork of clear-cuts that had carved up the forests of northwest British Columbia as a metaphor for the precariousness of rural life. They each shared stories with me about the many twists their lives had taken as the institutional connections that initially supported their careers had continually eroded and changed form. They described how the labor of maintaining long-term projects had changed their sense of dependence on other researchers, and eventually subdued their expectations that their own work would yield quick returns. In their musings about the possible futures of the region, they each lingered over apparent gaps—lost funding, rifts with former patrons, geographically dispersed colleagues and kin. Occasionally, the language of some of their most wistful reflections came directly from the research and governance initiatives that had given form to their earliest professional aspirations. "I thought that if I could help the land, I could help the people," Vegh reminisced shortly after we first met. She had picked up the memorable line, she admitted, from a textbook: an artifact from the Gitxsan Territorial Management course through which she had begun learning how to make maps in the early 1990s. The course had produced only one class of graduates before losing funding and closing down. In much the same way that Dennis had derived new senses of meaning from his own long-term experiments by cultivating relationships with unlikely collaborators, though, Vegh had learned to "help the people" in other ways. Even if the maps, databases, and other products of her work had yet to achieve many of the concrete objectives that had first drawn her into a life of research, she reasoned, these artifacts and the people she had come to know while producing them could outlive her, as long as she didn't stand in their way.

Science and Survival in the Shadow of Conflict

In the closing years of the twentieth century, the government of British Columbia spent tens of millions of dollars attempting to establish new kinds of bureaucratic offices, outdoor laboratories, and technical training programs throughout its sprawling northern forests in the hopes that research and researchers might mollify future conflicts there. Many of the researchers who began building their careers through these processes actively positioned

their projects to enroll residents into emergent governance processes and to underscore their own sense of investment in the region itself. Yet to what ends have these investments obtained as the work of institution building has been abandoned by a shrinking state? What kinds of relationships endure as waves of technocracy crest and retreat? What new relationships emerge?

Many scholars have described the refashioning of forested landscapes as the production of new kinds of subjects and new kinds of space (N. Smith 1984; Sivaramakrishnan 1999; T. M. Li 2014). Whether by reifying specific imaginaries of nature and culture (Braun 2002), naturalizing new systems of centralized management and extraction (Scott 1998; Prudham 2005), or translating conservation idioms into new mechanisms of discipline (Jacoby 2001; Agrawal 2005; Kosek 2006; West 2006), scientists and other technical experts have long been treated as indispensable to these processes. Yet the scientists themselves who apparently enact state control over forests and their communities maintain many different kinds of relationships with the institutions that fund their work. In the decades after World War II, dozens of forestry scientists from Europe, the United States, and Canada's metropolitan centers moved to regional BC Forest Service offices in Smithers, Prince George, and other emerging towns in northern British Columbia to help oversee the province-wide expansion of the sustained yield system. In memoirs published by the BC Forest Service, a few of these émigrés described their initial impressions of the region as if they were rugged explorers on a perilous adventure (see, e.g., Revel 2007). In the wake of the War in the Woods, new kinds of researchers were raised in and recruited to northwest British Columbia. New funding opportunities for watershed restoration research, expanded roles for conservationists within government-run resource management divisions, novel technical training initiatives for First Nations people, and proliferating bureaucratic tasks connected to treaty negotiations created hundreds of new jobs for environmental researchers and other experts across the region. A broad transition between technical frameworks for managing land, in other words, effected a profound demographic transition as well. Dozens of people already living in the area—many of them First Nations—began technical careers in order to fill these positions. Meanwhile, hundreds of other people—nearly all of them White—moved there in order to start or continue their careers in concert with these emergent initiatives. Over time, these arrivals helped further establish Smithers as a destination for young professionals and other "amenity migrants" (Chipeniuk 2004; Özden-Schilling 2019a). For Gitxsan people who had moved away from the region as young adults, however, the

sudden emergence of technical jobs and training opportunities provided an additional impetus to return "home."

Many of the research and capacity-building projects begun in British Columbia during the 1990s had broad and ambitious horizons. Tracking generational changes in forest composition, like building new infrastructures for Indigenous-led research, demanded researchers who were willing to cultivate deep, long-term attachments to the locations of their work, and to conceptualize their own expertise as a product of place. Yet as the researchers themselves were keenly aware, the political projects that their work helped to underwrite had divergent aims and addressees. For the predominately Euro-Canadian researchers who pursued this work as employees of the BC Forest Service, as representatives of NGOs, or as independent researchers who funded their work through grants and commercial contracts, the sense of obligation they articulated around their research framed the forests of British Columbia as a consummate public resource. The vast majority—over 94 percent—of British Columbia's roughly 945,000 square kilometers of land is held by the provincial government as "Crown land," these researchers often reminded me.[11] Until very recently, most conservation-oriented research projects in the province had been funded by taxes on timber harvested from this same land (see chapter 5). Indeed, the fact that so much of BC's timber was logged on government-owned land formed the crux of the so-called Softwood Lumber Dispute, Canada's decades-long trade conflict with the United States (Zhang 2007). The proper stewardship of "public" forests, my non-Indigenous interlocutors routinely implied, was the duty of scientists working in the public interest—whether or not they had government jobs.

Whether in stories about their formative experiences as researchers, discussions of mapping practices, or speculations about future developments, Gitxsan and Gitanyow experts invariably framed their spaces of work through concrete obligations to specific house groups, family members, and representatives. As Darlene Vegh put it, "When I want to go into one of the [Gitxsan] house territories and make a map, I need to wait for the approval of the local chiefs, the [Gitxsan] Treaty Society, and the resource management group down at the band office. Those White guys can go in whenever they want, right? It's all just public land to them."[12] Individually, Vegh and other First Nations researchers described the sense of access and authority they felt over their traditional territories in deferential and circumspect tones. They also acknowledged that much of their work had become increasingly federated as relationships between traditional house group chiefs and bureaucratic officials had changed shape in recent decades due to constant

changes in the ways that their institutions were recognized by the state (see Nadasdy 2017; McCreary and Turner 2018). Despite these transitions and tensions, however, individual researchers and the products of their research have continued to act as interfaces between life on the territories and the shifting terrain of Canadian law.

The ambivalent way that Canadian courts and bureaucratic organizations evaluate First Nations–produced technical data mirrors these institutions' deeply conflicted appraisals of other Indigenous engagements with land.[13] For nearly half a century after the federal reserve system was formally established in British Columbia and First Nations people were forcibly relocated to minute reserve villages throughout the province, First Nations groups were legally prohibited from pursuing legal action to reacquire control over the lands that had been stolen from them through the gazetting process. Even after the prohibition against organizing land claims was rescinded (along with prohibitions against potlatches and traditional feasts) through amendments to the federal Indian Act in 1951, First Nations people in British Columbia and elsewhere continued to be fined and arrested for using traditional fishing weirs and nets, harvesting trees and hunting without provincial licenses, and engaging in other subsistence practices. Many First Nations fishers and hunters active throughout the twentieth century, my Gitxsan interlocutors reminded me, were well aware that these rights had already been explicitly granted to them through the original Indian Act passed in 1876 (Kelm and Smith 2018). As the Nisga'a First Nation and other groups resumed their research on land claims following the midcentury amendments to the Indian Act, a growing range of settler audiences were forced to acknowledge these contradictions as well. In 1967, a Nisga'a hereditary chief named Frank Calder, who had already served for nearly two decades as an MLA of British Columbia, sued the government of British Columbia, asserting that the Nisga'a First Nation still owned their traditional territories along the Nass River, since they had never ceded these lands through a treaty. When the Supreme Court of Canada overturned the provincial courts' rejection of the suit six year later, the decision affirmed the prior existence of Aboriginal title. Since treaty-making in British Columbia had been halted with the signing of Treaty 8 in 1899, the *Calder* decision effectively signaled that nearly all of the land in British Columbia was subject to historical claims.

For First Nations people who were already engaged in institution-building work and land defense, the *Calder* decision immediately impacted their long-term goals and day-to-day lives. Gitxsan hereditary chiefs and other elders who had recently begun working with local Gitxsan artists

to establish a museum and cultural center on the territories began hiring as research assistants young Gitxsan who were returning after completing their college degrees (Özden-Schilling 2020). Much like the technical capacity-building efforts that proliferated in the decades that followed, the land claims that these assistants eventually contributed to achieved mixed practical results. The federal appeal to the *Delgamuukw and Gisday'wa* case established precedents that enabled other First Nations to use oral histories and hereditary leaders as bases for making land claims of their own, and has been widely celebrated as an epochal transition in the global development of Indigenous engagements with settler law (Borrows 2002; Daly 2005). Yet the same decision also demurred on a technicality and failed to grant the Gitxsan territorial title, and instead invited them to return to court for a new trial—an invitation that, more than twenty years later, the claimants have yet to take up (Napoleon 2013).

Even as formal land title has remained elusive for nearly all First Nations claimants in British Columbia, practitioners of land defense have continually sought out new avenues for pursuing their work (Blackburn 2005). By the time Gitxsan and Wet'suwet'en hereditary chiefs initially submitted their joint land claim at the provincial courthouse in Smithers in 1984, other land claims researchers working elsewhere in British Columbia had been further energized by the explicit recognition of Aboriginal rights and land title in Section 35 of Canada's newly patriated constitution (Manuel and Derrickson 2015). One year before the initial provincial decision on the *Delgamuukw and Gisday'wa* claim was announced in 1991, land claims researchers and other people developing land defense strategies were encouraged yet again when the Supreme Court of Canada affirmed that Section 35 protected the fishing rights of Ronald Sparrow, a Musqueam man who had been arrested for using nets that were longer than those allowed by provincial law. By interpreting fishing and hunting as "inherent" Aboriginal rights, the *Sparrow* decision further asserted that it was up to provincial and federal authorities to prove that any future efforts to restrict Section 35–protected rights were legally justified, rather than leaving First Nations people to bear the burden of proof (Culhane 1998). A decade and a half later, the Supreme Court affirmed this distinction yet again when it agreed that the rights of the Haida Nation had been violated when a company harvesting tress on their claimed territories had transferred harvesting rights to another company without consulting the Haida (Weiss 2018).

My Gitxsan interlocutors knew the many legal decisions enframing Indigenous land rights in British Columbia, and occasionally cited them for

me in painstaking detail. Yet when describing what empowered them to engage with their territories in meaningful ways—whether through data collection and direct action, or exploration and coexistence—most of these researchers referred less to Canadian law than to the persistent labor of their colleagues and kin (see Whyte 2018). While many different forms of jurisdiction had been recognized and reiterated through legal decisions and statutes, their comments reminded me, they still had to be enacted through the ongoing practice of activities like research and land defense (see Manuel and Derrickson 2015; Pasternak 2017). By underscoring how her work in the field was invariably shaped by shared, if amorphous, goals, Vegh quietly distanced herself from the emblems of prestige and political influence that served as currency in the networks that linked so many of the region's researchers to other professional worlds. Time and again as we discussed the possible impacts of the mapmaking and databasing work that she performed on behalf of specific house groups, she emphasized that the power to make decisions rested with the house groups alone. She had no wish to interfere with their deliberations, she insisted, but remained conscious of how the documents she produced might nevertheless turn vulnerable people and sensitive places into objects of study for others (see Tuhiwai Smith 1999). Vegh's reflections often conveyed a circumspect belief that she could not ameliorate these risks simply by investing her research with a generalized sense of pathos (see Million 2013; M. Murphy 2015). By keeping specific relationships in mind as she worked, though, she could enable others to keep working as well.

Who Won the War in the Woods?

More than three decades have passed since journalists and political actors began framing Gitxsan-led blockades as a branch of a broader War in the Woods. Another two decades have passed since most of the research and governance programs initiated during these conflicts were scaled back or abandoned by government funders. Yet despite the radically different understandings of justice and stewardship that enframe their technical work, White and First Nations researchers continue to find themselves and their research enrolled in debates over the war's ambiguous afterlives. The following chapters each offer routes for exploring the question I posed on the road to Date Creek. To repeat it here, with an additional provocation: Did scientists win the War in the Woods?

Most of my interlocutors were reluctant to claim that the conflicts over logging had ended in any decisive way, or that the period had produced any lasting beneficiaries. While the number of First Nations–led blockades declined in the late 1990s, most of the technical training and land use programs initiated by the Harcourt government were only marginally successful in achieving their original aims. As of 2021, only seven of the First Nations to begin the centralized treaty process have negotiated a final agreement (BC Treaty Commission 2021).[14] Many other First Nations have explicitly rejected the so-called land selection model utilized by the provincial negotiators and the underlying principle of federal extinguishment, a process whereby claimants must fully renounce their claims to their broader traditional territories prior to beginning negotiations in order for provincial authorities to potentially award them limited jurisdiction and royalty rights over minute portions of their original lands (Manuel and Derrickson 2015).[15] Meanwhile, new processes for consulting First Nations representatives for resource developments on claimed territories have engendered still more conflicts over jurisdiction and tremendous administrative strains for First Nations offices. Land and resource management plans have now been approved for nearly the entire province and have together led to the establishment of dozens of new provincial parks and other protected wilderness areas. Almost none of the new plans, however, involved substantial contributions from nonspecialist committees in the manner envisioned by the original developers of the format (see chapter 1).

Understood in terms of their transformative effects on land use laws and institutions, War in the Woods–era initiatives and reforms achieved mixed results. Yet by asking whether scientists—as individuals—"won" the war, this book examines a deep and abiding tension that such assessments have failed to address. How have the individual researchers enrolled into these conflicts been made responsible for securing different collective futures, and how have researchers' relationships with these collectives changed as the futures in question unraveled? Even as the Harcourt government hailed White and First Nations researchers as heroic mediators, environmental scientists working throughout British Columbia were personally accused by forestry-dependent residents of selfishly benefiting from the conflicts over clear-cut logging (Davis 2009; Parkins et al. 2016). The grants, field sites, and other resources that these researchers utilized to further their own careers, such critics complained in newspaper editorials and elsewhere, had come at the expense of families who had built their lives around logging jobs (Reed 2003; Satterfield 2002). For the meager handful of First Nations

people to receive significant training from initiatives established during the period, accusations of unequal benefits went further still. Rather than using their skills to establish local institutional capacity, some critics argued, many of the graduates of these programs quickly "abandoned" their home communities to seek out better-paying jobs in urban centers (Cooke and O'Sullivan 2015; Hillier et al. 2020). The researchers who scrambled to continue their careers as supporting initiatives dissolved around them, these criticisms implied, had never really been committed to their collectives at all.

In order to understand how long-term research has come to matter to northwest British Columbia in the wake of the War in the Woods, the lives and trajectories of individual researchers must be considered in closer detail. Government downsizing has been a wrenching and disorienting experience for many of the people who built scientific careers during this era. Time and again, senior researchers presented the crumbling of technical infrastructures as scenes of personal loss. Data-driven land use plans abruptly disassembled after years in gestation. Field research training programs shut down after graduating but a handful of students. Long-term forestry experiments that fell into disuse after the scientists who managed them were reassigned to other sites. Despite becoming unmoored from their original institutions and projects, however, many of these researchers have continued to live in northwest British Columbia. For some, the maps, data sets, and other artifacts that their earlier projects produced have become increasingly crucial to their sense of belonging in the region, even as the political affordances of these artifacts have either attenuated or changed form as the region's institutional landscape has become more complex. The persistence of senior researchers and technical artifacts with connections to earlier conflicts over industrial forestry has also helped to draw new researchers to northwest British Columbia—researchers who often hope to build their own careers in concert with the region's celebrated legacy of activism. Yet as different generations of White and First Nations researchers articulate the value of their work amid this interplay of professional mobility and persistence, a critical question still lingers: How does the continuing "survival" of untethered research and researchers matter to the survival of other forms of life?

Making sense of how experts pursue new forms of belonging and meaning as their institutional attachments erode has become an urgent problem for anthropological studies of expertise. Historically, most of the individuals who populate academic treatments of technocratic power attract scholarly attention because of the ways that they carry out the directives of institutions, or because of how they "perform the state as unified, knowing, and

beneficent" (Mathews 2011, 11; see also Mitchell 2002). Others are hailed primarily for resisting or subverting such plans (Scott 1985; Gibson-Graham 2006; Anand 2017). The majority of the individuals whose stories fill the following pages, though, fall into a third category: scientists and technicians whose institutional affiliations have shifted over time, or who have never held permanent positions with a single organization. By describing these people as *rural researchers*, I mean to underline this ambiguity. I include both city-based scientists whose infrequent, arduous journeys to places like northwest British Columbia helped to define these spaces as "remote" in the first place, as well as those who were born in these areas or eventually came to live in them year-round. The term also collapses a wide range of professional positions and affects: government-employed hydrologists who moonlight as consultants for conservation NGOs; managers of community forests who lecture school groups about the ecological pitfalls of clear-cutting; independent botanists who take pride in their work for community-run land planning boards; First Nations mapmakers who help dozens of different academic researchers conduct studies on traditional territories. By referring to all of these people as rural researchers, I primarily mean to signify the lingering ambitions that they have continued to invest in their shifting, uncertain roles. I also mean to underscore how these institutional uncertainties have engendered new strategies for performing expertise. Rather than attempting to project their authority by obscuring the failures of the institutions that originally funded their projects, rural researchers have increasingly called attention to the precarities they face to particularize new pleas for change.

As the following chapters show in detail, researchers' efforts to transcend the government attachments they accrued in the years after the War in the Woods reveal sharply divergent expectations of access to spaces of power. Many non-Indigenous researchers responded to the onset of government restructuring by designing new organizations to replace specific functions of government bodies where they had already enjoyed substantial careers. Following the closure of the Forest Service office in Smithers in 2002, for instance, Dennis's wife, Pauline, helped to found an independent research center, in part to facilitate the rescue of thousands of paper-based technical reports that had been stored at the former government office. Without a dedicated building and staff to manage the material generated by government-funded research, she and other scientists worried, decades' worth of archived field data would be lost as researchers dispersed and old reports were discarded.[16] For many Gitxsan, however, the blockades had led

to some of their first substantial opportunities to work *with* the government of British Columbia. When the NDP rose to power and new capacity-building programs were radically expanded in the early 1990s, a few Gitxsan had already developed research experience helping to prepare paper maps, oral history transcriptions, and other documents for the original *Delgamuukw and Gisday'wa* trial (Sterritt et al. 1998; Marsden 2002; Daly 2005). Other Gitxsan had either been too young to participate in the trial, or had only begun to get involved in mapmaking projects after joining direct action protests when the trial was underway.

White and First Nations researchers' divergent experiences of downsizing have generated equally diverse strategies for adapting to new circumstances and attempting to regain power. Many of these strategies, my interlocutors acknowledged, had transformed their relationships throughout the region. Some Gitxsan researchers reflected on the conflicts that had driven them to break ties with former patrons, and the sense of estrangement they had felt while working to build up other, geographically dispersed networks (see chapter 2). Former government scientists living in Smithers, meanwhile, complained to me about the increasingly complicated funding mechanisms and collaborative arrangements required to keep long-term projects in motion, but nevertheless celebrated their newfound autonomy. At times, the ways that my Euro-Canadian interlocutors described the collapse of their old institutional orders seemed to signal a weary embrace of the neoliberal doxa that "all that is social could be otherwise" (Gershon 2011, 537).

And yet: something gets lost when we explain these transitions as merely the inexorable march of entrepreneurialism. The kinds of uncertainties that have accompanied government downsizing have not led most researchers who still live in the region to renounce the obligations they built up through their work. Many Euro-Canadian researchers described their experiences with downsizing to me as a heightened and rerouted sense of dependency. The contingency of each new job and funding arrangement reminded them that their aggregate labors were no longer encompassed within defined institutional positions and thus could not be easily "filled" after they moved on or retired. Far from eschewing these dilemmas by focusing on smaller projects and shorter timelines, many aging researchers have confronted downsizing's limits by displacing their earlier expectations for their work in the hopes that an attenuated version might somehow be saved.

Over time, I came to see small gestures of displacement suffused throughout my interlocutors' everyday lives. For most of these people, their reflections on the War in the Woods and its amorphous legacies did not end with

laments, whether about the erosion of political institutions, the unraveling of social orders, or the forest-wide changes wrought by logging and climate change. Rather than ascribing these changes to a common trajectory, they troubled these narratives by investing seemingly dormant artifacts of their work with senses of latent potential. In subtle ways, both White and First Nations researchers found ways to remind me that these artifacts might outlive them, and called attention to other uncertainties beyond their control. Tended with interest and freed of expectation, the artifacts generated by rural research could get taken up later and put to new ends. It was in these kinds of displacements, rather than in the accumulation of knowledge or the perfection of theory, they suggested, where the futures of their work might reside.

Artifacts and Afterlives

By locating anxieties over collective survival at the center of contemporary rural research, this book aims to raise questions not typically applied to anthropological studies of expertise: How do technical artifacts facilitate the reproduction of social formations (including both traditional governance systems and communities of expertise), and how can the practices that artifacts engender reroute or refashion these processes? What happens to the relationships constituted through these practices after artifacts outlive the programs and policy regimes for which they were originally created? How has the persistence of technical artifacts impacted First Nations experts and their political goals differently from their non-Indigenous neighbors?

The following chapters show how maps, project reports, land use plans, and other artifacts of research eventually come to shape far more than the organization of resources and the application of power. Dislodged from their original scenes of application (Derrida 1988; see also Das 2007, 7), technical artifacts can also enact change simply by persisting over time, and "holding a place" for new relationships and forms of reason to emerge (Riles 2011, 172–76).[17] By continuing to anchor everyday research practices even as experiments end and policy regimes shift, some of these artifacts have also come to facilitate critical modes of relating and self-fashioning for the researchers navigating these changes (Fischer 2009, 197–214). The persistence of these attachments, historian William Rankin suggests, points to the need for "new categories . . . for analyzing science over the long[ue] durée" (2017, 353). Rankin himself offers two useful candidates: "When a celebrated and vibrant project becomes untethered from the network that

originally created it, it can transform into what I call a zombie project," Rankin explains, "with production being continued for new purposes by different groups. Networks can likewise continue without shared commitment to a project, with a negative network of acrimony, criticism, and active opposition remaining quite robust even as production splinters" (357–58). Like the "state schemes" with which they are frequently, if unevenly, articulated, technoscientific networks and projects rarely simply succeed or fail (Latour 1996; Li 2005). Taken up by individuals in the midst of their own transitions, the artifacts of these ventures can also persist within other forms of life (Haraway 1997; Dumit 2004; Fischer 2003).

In many ways, the tools of mapping and conservation research have served their users as vehicles for both enacting and surviving institutional restructuring. Unlike the technical artifacts analyzed in other treatments of technopolitics, however, these tools do not necessarily serve to reorganize decision-making processes or facilitate direct enactments of political authority (Mitchell 2002; see also Latour 1990). Rather, the marginalized classification systems, territory maps, and planning documents I discuss in the following chapters nevertheless profoundly shape rural researchers' real and imagined connections to diverse spaces of power, from the hereditary governing groups for which Gitxsan experts were enlisted as advocates, to the centralized state bureaucracies that some settler scientists saw themselves leaving behind. These tools also offered their authors vehicles for moving messages and meanings between groups whose members had previously communicated with each other and the world at large in substantially different ways. Perhaps just as importantly, technical tools also occasionally served as vehicles for the researchers themselves, by lending form to new relationships and taking them elsewhere after patrons moved on.

The presence of government offices and personnel in northwest British Columbia has greatly diminished since the War in the Woods. Artifacts of conservation and land claims research, however, have proliferated. Throughout the region, references to technical documents and the circumstances of their production constantly filter into everyday conversation. Dour BC Forest Service reports on future timber harvest levels; colorful maps of watershed management areas, provincial parks, and Gitxsan and Wet'suwet'en house group boundaries; newspaper editorials bemoaning salmon population models or simulated projections of glaciers in retreat: each kind of artifact offers either prompts for new complaints and assertions or details for ongoing chatter. By showing how the artifacts that precipitate these exchanges reposition researchers within the social worlds that

make up northwest British Columbia, however, I mean to draw a different set of coordinates between these researchers and the audiences of technical work. In subtle ways, the tools and documents produced in conjunction with long-term experiments and research-based governance initiatives have conditioned how researchers live and work in the northwest and how they imagine the region's histories. Over time, these artifacts have also come to shape how individual researchers articulate both their sense of the region's possible futures and their ideas for how their own work might help to bring these futures about. In addition to serving as props in cagey political performances that, as Andrew Mathews (2011, 3) argues, "affect how people believe or disbelieve in official knowledge about forests and about the state," the documents and maps of conservation research have increasingly served to reformat this authority by pointing to futures beyond the state as well.[18]

The researchers whose stories I share in the following pages often cited small, concrete things while explaining what had become of their institutional ties after government downsizing unmoored their careers. For Dennis, specific experiments and concepts that he developed through his work in the Date Creek Research Forest helped establish his reputation as a staunch critic of provincial forestry policy, even as they were taken up by other academic scientists around the world as tools for projecting the consequences of climate change (see Özden-Schilling 2021). Gitxsan researchers, meanwhile, sometimes described their research artifacts to me as reminders of unfulfilled promises—including promises that their earlier patrons had made to them, as well as promises that they and other experts had made to the members of specific house groups. Russell Collier, a Gitxsan man and GIS technician who helped Darlene Vegh to found SWAT in the mid-1990s, occasionally reminisced to me about the expensive computers and mapping software his office purchased with government grants. Not only were the computers critical to Russell's efforts to develop his own expertise and train young Gitxsan cartographers, he remembered, but they were also a sign that SWAT was becoming a "force to be reckoned with" in emergent contests with developers and the state (see chapter 2). After SWAT was disbanded several years later, though, the sight of the same computers gathering dust in the GTS office became for him and others a shorthand for institutional paralysis.

In critical ways, the persistence of technical artifacts produced in the wake of the War in the Woods has facilitated transfers of ideas and ambitions between different generations of researchers. This persistence, however, has also introduced new directions, possibilities, and uses. Dennis's data sets, like SWAT-produced maps, have been shared, inherited, and

collaborated on by dozens of younger scientists, many of whom have been motivated by different understandings of the collective political projects for which these artifacts were originally developed. This is not to say that subsequent generations of researchers have simply taken up the artifacts of senior colleagues' work at random and applied them to different ends. The persistence of maps, data sets, and other tools of research has allowed senior researchers to practice strategic forms of deferral, as well, by providing platforms for facilitating technical collaboration during legal and political stalemates. More than three decades after the initial decision in the original *Delgamuukw and Gisday'wa* trial, Gitxsan researchers continue to rely on both old and new maps to cope with the loss of hundreds of historic trails and thousands of so-called culturally modified trees destroyed during the rapid expansion of clear-cutting on the Gitxsan territories in the 1970s and '80s (L. M. Johnson 2000).[19] Such trees, often several centuries old, had served generations of Gitxsan as trail markers and sources of bark products, and were thus of critical importance in proving historical use and occupancy in terms that Canadian courts would accept. As new generations of Gitxsan researchers build strategies for contesting pipelines and other emergent developments, the continuing loss of these trees and trails has increased their reliance on historical—and still accumulating—data sets to demonstrate the persistence of their engagement with the land.

In the two decades since the government of British Columbia began reducing its support for conservation research and First Nations technical capacity building, many of the collaborative relationships and governance experiments that White and First Nations researchers have assembled retain substantial paper trails and human links back to earlier, more centralized institutions.[20] Throughout the following chapters, I call attention to these material residues and to the aspirations of authority and legitimacy that still cling to them. Technocratic forms of conservationism, both the kinds that undergirded settler scientists' earliest calls for data-driven land use planning and the kinds that have come to influence many First Nations assertions of sovereignty in the decades since, were and still remain projects of collective transformation. The people with whom I worked found ways both explicit and indirect to remind me that their commitments to these projects had not faltered, even if the projects themselves have changed shape. The daily labor of confronting downsizing's limits shifted their sensibilities in other ways, however. By inscribing their anxieties about professional succession into conversations about the value of rural research writ large, many

researchers struggling to stay in the northwest have unsettled precisely the kinds of technical assurances that their work was once meant to secure.

To talk of rural research as a problem of social reproduction means acknowledging bitter ironies. For decades, the governments of British Columbia and Canada have justified their interventions in First Nations communities by pointing to forms of continuity assumed to have broken down: collapsing governance relationships; disappearing languages and practices of land-based education and labor; ruptured transmissions of knowledge.[21] Indigenous scholars have repeatedly challenged these assumptions by calling attention to the myriad ways that tropes of Indigenous culture loss and disappearance are leveraged by state institutions to effect dispossession, environmental damage, and political marginalization (P. J. Deloria 2004; Blackhawk 2006; Callison 2020; Callison and Young 2020; Estes 2019; Hobart 2019; J. R. Smith 2021). As Dian Million (2013), Kyle Powys Whyte (2014, 2018), and others have shown in detail, many of these deployments have found their most pernicious impacts in misrepresenting the dynamic kin-based relations and labor through which critical knowledge-making projects have actually been sustained, including those that continue to support healing practices and collective responses to changing climates (see also Z. Todd 2014; Kolopenuk 2020). By examining how government institutions are struggling to reproduce themselves in Indigenous spaces, some scholars might justifiably argue, an incautious scholar could wind up contributing to these very erasures (see Coulthard 2014; V. Deloria 1988).[22]

Disentangling state justifications for technical capacity-building programs from these programs' ambiguous legacies and lived effects demands a new approach to the anthropology of science, particularly in settings of enduring colonial conflict. By recentering technoscientific practices and artifacts within the complex social worlds of the individual researchers enfolded into these conflicts, and by treating their formal institutional attachments as contingent, such an approach would refuse to treat technoscience solely as either telos or imposition (see Aporta and Higgs 2005; Medina, Da Costa Marques, and Holmes 2014; Mavhunga 2017). Particularly in zones of Indigenous and settler colonial conflict, a recentered understanding of technoscience would also enable scholars to more effectively track the ways individuals' lives and aspirations come to shape ostensibly collective projects, and how these projects reshape individual lives in turn.

As I show throughout the following chapters, White and First Nations researchers have been made responsible for securing collective futures in

markedly different ways. For many of my interlocutors, these responsibilities were conveyed as a kind of inheritance. The ambitions invested in a long-term research site or a cherished planning document may be passed from senior Euro-Canadian researchers to younger collaborators as individual legacies—accomplishments to be developed as the latter see fit (see chapter 3). First Nations experts recruited to carry on precarious projects, however, often receive these inheritances as daunting demands. Reflecting to me on their experiences nearly two decades after the post–*Delgamuukw and Gisday'wa* period fell into disarray, Gitxsan cartographers remembered feeling compelled to view the sacrifices that they made for their work as inseparable from sovereignty's promise (see chapter 2). The primary vectors of their inheritance, in other words, were not data sets or research projects, but their identities as technical experts. Tethered to collective governance projects, though, these identities also discouraged some Gitxsan researchers from pursuing more flexible professional attachments as government support for Gitxsan-run initiatives began to dissolve.

Rather than challenging the grim depictions of endurance offered in so many ethnographic accounts of contemporary rural life, this book asks instead how certain problems of collective survival have come to be understood and administered to by some of the people entrusted with solving them. For many of these people, the shifts in practice that accompanied government downsizing carry their own threats of erasure. The people I call rural researchers have spent years cultivating new relationships and remediating old projects in response to these uncertainties. In the process, however, they have also had to navigate multiple different idioms of rupture. The death or succession of a chief; the retirement of a senior researcher; the cancellation of a policy or loss of a grant; the transformation of a patch of forest: each kind of change calls forth expert assurances that the futures of the entities in question will retain recognizable ties with their pasts. Each transition, in other words, demands a different mode of survivance (see Vizenor 1994).

In some ways, negotiating government downsizing has brought White and First Nations researchers closer together. All of my interlocutors have struggled to find funding to support their work and younger collaborators to carry it on. Numerous long-term projects begun after the War in the Woods have simply unraveled, leaving some of the people who invested in them with a lingering, sometimes bitter, sense of nostalgia (see chapters 1 and 2). Treating these processes as modes of succession and inheritance makes these attachments visible, but it also brings differences to the fore. Like most scientists, the ecologists and botanists I met in Smithers confronted

new challenges with the tacit assumption that their disciplines were defined by transcendent theoretical commitments that would persist and develop, even if individual practitioners fell away or struggled to make ends meet. Gitxsan experts, meanwhile, confronted the assumptions of many government officials and White neighbors that their eventual assimilation by settler society and extractivist capitalism was only a matter of time. Both groups of researchers, then, have struggled to articulate what it would mean for their long-term research to "survive" as the institutions birthed amid the War in the Woods have continued to erode and transform. In the meantime, they still search for collective futures in which to invest their research, and for professional paths that will lead back to home.

Parallel Histories

This book is not about the strategic alliances that White and First Nations activists formed during the War in the Woods, or the labor that they and others have undertaken to keep these precarious partnerships intact in the decades since. Many rural researchers remain committed to the idea that a middle ground for negotiating settler colonialism's legacies might yet be built on the tenets of conservation science. Indeed, key land use policy changes and data-sharing infrastructures established across North America in recent decades have involved critical contributions from both White and First Nations researchers. As Larry Nesper (2002), Zoltán Grossman (2017), and others have shown, these engagements often help to bring entirely new subject positions and systems of value into being, and they often wholly deserve detailed studies their own. The ecology of institutions overseeing North America's forests is growing more fractured every year, and the roles that White and First Nations experts play within these institutions are becoming more complicated. The need for such analyses will only increase.

As a genre of anthropological writing, though, "conflict studies" carries distinct limits (see F. Li 2015). Beginning from sites of apparent conflict and compromise often leads ethnographic studies of Indigenous-settler engagements to implicitly reinforce prevailing assumptions about what ought to count as "collective life" in the first place. By looking for idiosyncratic practices of continuance, and by examining how new relationships and modes of belonging take shape around what Candis Callison (2014) calls "the communal facts of life," I seek instead in this book to understand how different conceptualizations of individual and collective life come into

being within everyday spaces of research. This researcher-centered approach underscores a fundamental methodological challenge as well. As in so many other rural communities in western Canada, most of the First Nations people and Euro-Canadian settlers who reside alongside the Skeena River and its tributaries continue to live in virtual isolation from one another (Bell 2023; Dinwoodie 2002; Furniss 1999; L. A. Robertson 2005). Finding commonalities between each community's experiences and aspirations without overly dwelling on a few sites of direct engagement has occasionally required me to project potential points of intersection in spaces where actual dialogue is elusive.

The sense of isolation that many of my interlocutors expressed during our conversations underscored the awkward challenges I would soon come to face in attempting to represent these individuals' relationships with the institutions that were once their professional homes. More than four decades of land claims research, legal trials, treaty negotiations, and bureaucratic confrontations have left many Gitxsan experts exhausted and wary. Most had spent much of their professional lives serving as mediators between Gitxsan house groups and the Gitxsan bureaucratic institutions that emerged during the War in the Woods. They had also struggled to navigate an increasingly complex field of tensions linking these different bodies as treaty research and government policy introduced new ambiguities into their relationships with one another (Özden-Schilling 2020). As Val Napoleon (2005), a Cree legal scholar and longtime Gitxsan advocate, has argued, several long-standing fault lines were entangled with the original paper map produced for the original *Delgamuukw and Gisday'wa* trial, when trial researchers abridged Gitxsan claimants' depositions in a manner that caused one *wilp* (the singular name for a house group) to be left out of the completed map. During the trial as well as during subsequent treaty negotiations, Gitxsan representatives were also repeatedly told by government lawyers that any kind of participation in province-run research and planning projects could be interpreted as recognition of the state, and thus could be taken as grounds for abrogating their original claims (Napoleon 2001). As a consequence, questions about maps—including many of the digital maps that SWAT and other Gitxsan organizations had helped to assemble during the 1990s and early 2000s—are still often taken as questions about the legitimacy of the house groups and other traditional entities that the maps had been drawn to represent.

Echoes of decades-old frustrations reverberated through many of my conversations with Gitxsan researchers. Most of the tensions that preoccupied

them during our time together, though, centered on emergent development disputes. As numerous locally active scholars and journalists have discussed at length, debt accrued through stalled treaty negotiations, and conflicting responses to new pipeline proposals have deepened existing rifts between some Gitxsan house groups and the GTS executives who still serve as the legal representatives of the entire Gitxsan *huwilp* (McCreary 2016; Jang 2017; Napoleon 2019). When a GTS executive made a unilateral agreement in 2011 allowing for the construction of a controversial pipeline through the Gitxsan territories, chiefs from roughly half of the Gitxsan house groups responded by staging a public blockade of GTS headquarters (Gitxsan Unity Movement 2012a).[23] The blockade had ended only a few months before I arrived in the region to begin my main period of fieldwork in early 2013, and lawsuits between the GTS and dissident house groups were still unfolding.[24]

The White scientists, technicians, and activists with whom I spent much of my time during this period often criticized the apparent "dysfunction" affecting Gitxsan-led bureaucratic institutions. Yet these same interlocutors also routinely decried the de facto segregation in place throughout rural British Columbia. Most of the board meetings and planning workshops I attended in Smithers began with an acknowledgment of the Wet'suwet'en First Nation, and the Gidimt'en Clan on whose territory the town itself was built. Many of the environmental scientists I came to know in the town, particularly younger people and midcareer professionals, were eager to detail their participation in community information sessions, teach-ins, and other First Nations–oriented outreach projects. They sometimes complained to me that they and other organizers of these events were relentless in their gestures of inclusiveness, but that these efforts were typically criticized or ignored by the First Nations groups they wished to recruit. Whenever local researchers or government scientists organized "community-wide" initiatives like land use plan amendments, risk assessments, or knowledge trusts, they invited representatives of the Office of the Wet'suwet'en or the Gitxsan Watershed Authority to participate in group discussions. As I eventually came to realize, however (and as numerous Indigenous scholars and their allies have long complained—see Nadasdy 2003; Whyte 2013), these invitations were typically extended only after the scope of a new plan or process had been agreed on and the terms of reference meant to structure ensuing discussions had already been spelled out. While a handful of individuals were deeply engaged in conversations and processes on both sides, White and First Nations technicians alike complained to me that their interactions with each other too often felt inconsequential.

In empirical terms, the dramatic decline in government support for independent research projects since the late 1990s and the cancellation of watershed restoration initiatives meant the near disappearance of opportunities for Smithers-based ecologists and Gitxsan and Wet'suwet'en mappers to apply for shared grants. As piecemeal jobs and research funds emerged elsewhere, erstwhile collaborators simply fell out of touch. Whenever I asked senior scientists and planners active in the region in the 1990s to reflect on their experiences working with First Nations mappers in the first years after the War in the Woods, most were far more blunt than their younger colleagues in their assessments of the disconnect that had developed in the years since. Some attributed the distance to other White activists' impatience with the land claims process. "'What are you going to do? Sit around and wait another thirty years? By then, there'd be no trees left!'" one planner sarcastically pantomimed, reenacting for me the logic espoused by many of her colleagues at the height of industrial logging's expansions in the region (see chapters 1 and 2). Others admitted that their timidity around "internal" disputes between house groups of the same First Nation had cast a pall over early collaborations, a state of unease that resurfaced whenever new collaborative endeavors were proposed. "We knew that that stuff was going on, but we knew that we couldn't delve into it, so we didn't," a longtime Smithers-based environmental planner admitted to me. "We just hoped it would all work out."

As I gradually came to know dozens of Smithers-based consultants and Gitxsan and Gitanyow mappers living throughout the region, I was struck by the professional isolation, even loneliness, that many of them had come to experience since their institutional identities began to transform in the early 2000s. My initial attempts to locate the authors of specific maps felt like a doomed quest to track professional nomads. Seeking out the institutions where new cartographic conventions had been established often led me to the websites of government divisions that had been dramatically reorganized or shut down since the maps in question were published, or to the rented office spaces of independent research groups surviving from grant to grant. During twelve months that I spent living in the northwest as well as during a series of one- to two-month-long visits spread out over the following eight years, I conducted interviews with over six dozen researchers and repeatedly accompanied several of them to collect data on forest growth experiments and other field-based trials. I also worked to make sense of the relationships they had articulated, however fleetingly, through the media they had produced earlier in their careers, a strategy that caused me to make repeated trips to

other offices in southern and central British Columbia to meet former colleagues who had participated in earlier iterations of key projects.

Ultimately, the following chapters represent my attempt to treat Indigenous and non-Indigenous histories of research and institution building on their own terms. Read together, these twinned histories echo the feedback and dissonance of parallel debates conducted in adjacent spaces, yet often just out of earshot. The common characters linking the two sides thus frequently include research tools themselves: handheld Global Positioning System (GPS) devices; survey notebooks; digital map layers and elevation models; online data repositories; tree lists, whether as subjects of study, targets of extraction, or discrete monuments of ritualized modification. In many instances, these artifacts enabled researchers to coordinate key practices and sustain their relationships. Over time, as I argue in the following chapters, these artifacts also became objects of inheritance. They linked individual researchers across different generations, policy regimes, and settler-Indigenous divisions. For better or worse, it has been through these idiosyncratic transfers that the worlds of rural research have persisted. By holding open a place that future researchers might eventually come to inhabit, the artifacts of research have given ground to new collective dreams and ambitions even as the social worlds that make up the region remain in perpetual flux.

Chapter Outline

Each of the five following chapters details a process whereby researchers came to conceptualize "survival" in new terms. Chapter 1, "Nostalgia: Placing Histories in a Shrinking State," explores how forest ecologists and other environmental scientists living in Smithers articulated new senses of place and collectivity in the wake of government retreat. Rather than simply investing in new collaborative relationships, many of the scientists I met there—including dozens who arrived after downsizing had already begun—also articulated their work as contributing to a shared legacy of activism that they saw as defining the town's history. As I show, these nostalgic articulations have become increasingly crucial to rural researchers' efforts to define the meaning and boundaries of scientific communities in the absence of institutional structures. Contrary to prevailing images of technocratic expertise as an abstracting set of knowledge practices designed to place experts outside historical time (Ferguson 1990; Scott 1998; Mitchell 2002; see also Fabian 1983), I argue that rural researchers displaced by government

restructuring have grown increasingly adept at "placing" their expertise in emergent genres of local history. In the process of articulating expertise to belonging, however, Smithers-based researchers have also helped to obscure the forms of mobility that continue to allow them and other Euro-Canadian researchers to live and work in the northwest—a place to which, unlike their First Nations neighbors, the majority of them first moved by choice.

Chapter 2, "Calling: The Returns of Gitxsan Research," traces the career arcs of two prominent Gitxsan mapmakers who first came to positions of power and visibility as the founding members of SWAT. The chapter follows their bifurcating careers after the collapse of a short-lived capacity-building program in the province drove many recently trained First Nations mapmakers away from their reserves in search of work. During the capacity-building era and throughout its aftermath, Gitxsan GIS experts negotiated expectations that their work would benefit their patrons and elders, and that they would devote their specialized labor to specific collective causes. Perhaps the biggest challenge faced by individual Gitxsan mapmakers, however, has been the expectation that they themselves would eventually come "home," and that they would help to redefine their nation's social worlds by connecting them to new technical networks. As they pondered how the artifacts of their work have been taken up by refashioned Gitxsan bureaucracies, some of them have struggled to reconcile the urgency of these demands with the estranging effects of displacement.

Both White and First Nations experts in northwest British Columbia saw their designs on influence and authority dramatically refashioned during the early years of the twenty-first century. The ways that these researchers reflected on the professional adaptations that they have made in the years since, however, caused them to frame their senses of obligation in markedly different ways. Particularly after the provincial government's promise of a New Relationship in 2005 brought new rhetorics of engagement into spaces and processes that elected officials had previously abandoned, the bonds that my interlocutors subsequently used their work to secure reflected shifting understandings about what kinds of shared futures they saw as possible. Chapter 3, "Inheritance: Replacement and Leave-Taking in a Research Forest," explores how Dennis, an aging forest ecologist, conceptualized the work of "passing on" the Date Creek Research Forest to a younger collaborator as the site began to decay. As the meanings of the partial cutting experiment that originally defined the forest diversified, both Dennis and Kristen, his prospective successor, have worked to position their work in Date Creek to highlight the provincial government's failure to manage its

infrastructures along the temporal scales relevant to climate change. Like the Gitxsan house groups whose title claims to the land in question are still waiting to return to Canadian courts, the young woman entrusted with "inheriting" Date Creek is now learning to promote these multigenerational commitments as a new model of technical stewardship.

Chapter 4, "Consignment: Trails, Transects, and Territory without Guarantees," examines how new attachments and conceptualizations of stewardship have taken shape around flexible labor. With Darlene Vegh, I follow an ad hoc crew of temporary GIS mappers hired by the Gitanyow First Nation—a Gitxsan people with separate band governments, hereditary chiefs, and traditional territories from the neighboring Gitxsan First Nation—to map the route of a proposed pipeline through Gitanyow traditional territory. Focusing on the technical artifacts generated by transect mapping, an environmental mapping technique used to quantify objects of interest along a discrete linear path, the chapter examines how agile mapping and databasing practices have allowed Gitanyow and other Indigenous mappers to critique the geographical constraints of the provincial government's "land selection" model for negotiating new treaties with First Nations (namely, the demand that a First Nation renounce its claims over most of their traditional territory in exchange for broader jurisdictional powers over smaller areas). The chapter highlights the mundane and fragmentary nature of the practices through which contemporary forms of critique must be built—and, increasingly, deferred.

Chapter 5, "Resilience: Systems and Survival after Forestry's Ends," returns to Smithers to examine how some environmental scientists there have sought to imagine new forms for their work that would allow them to transcend their fears of further downsizing. In recent years, the concept of *resilience*—the idea that environmental systems and social forms can be designed to "bounce back" from disasters and other disruptive changes—has influenced a rapidly growing range of governance strategies in domains ranging from security planning and climate change mitigation to humanitarian aid. Among a number of Smithers-based scientists, resilience discourse and its associated initiatives have also reinvigorated their efforts to reconstitute an elusive sense of authority and power. To some senior researchers recruited to provide data and moral authority to one emergent policy initiative, however, the notion that translating laboriously accumulated field data into simplified risk models could ameliorate years of marginalization has only deepened their sense of estrangement. Chapter 5 shows how a handful of these researchers have sought to challenge the relativizing assumptions of

resilience theory and the resignation of the people who promote it by defining the "survival" of rural research in more idiosyncratic and personal terms.

In a brief epilogue, I turn to the Wet'suwet'en territories near Smithers, and to a new kind of War in the Woods. During the decade since my first visits to northwest British Columbia, Gitxsan and Wet'suwet'en land defenders established additional checkpoints and blockades in response to a profusion of new pipeline projects and disagreements over logging privileges. As pipeline companies began seeking court injunctions to remove land defenders in 2018, my interlocutors foreboded, no one knew what would happen if Canadian police arrived at these sites in full force. In early 2020, the first major sweep of arrests at Wet'suwet'en-run territory checkpoints inspired a national wave of solidarity protests—perhaps the largest Indigenous-led uprisings in Canada since the original War in the Woods. Examining how some retrospective debates over failed consultation protocols have repositioned Wet'suwet'en researchers as potential saviors in the disputes, I speculate about how new generations of activists may see their own lives take shape around the elusive promises of rural research.

NOTES

Preface

1 The Anglicized spelling of inherited names, place-names, and broader First Nations group names have all varied historically. Differences in spellings can be contentious, since they occasionally reflect disagreements over the legitimacy of specific bureaucratic bodies and legal decisions. Some scholars use *Gitxsan* and *Wet'suwet'en* to remain in keeping with how each group referred to themselves during the *Delgamuukw and Gisday'wa* trials, but use *Gitxsan* (or *Gitx̲san*) and *Witsuwit'en* in other contexts to reflect the spellings that some linguists from each group have deemed more phonetically appropriate. The Office of the Wet'suwet'en, a treaty organization that represents the hereditary leaders of the Wet'suwet'en house groups, has retained this spelling to keep congruence with their legal case for Aboriginal title. Popular media accounts of recent direct action protests have almost exclusively used the term *Wet'suwet'en* to refer to the territories and people involved. To avoid confusion and to underscore the continuing connection between my interlocutors and contemporary protests, I have decided to use the spellings of *Gitxsan* and *Wet'suwet'en* throughout the book.

2 Each of the terms used to refer generally to the original inhabitants of Canada and their descendants is problematic in different ways. The term *Aboriginal* is defined in the Canadian constitution and refers to all Inuit, Métis, and First Nations people in Canada. *Aboriginal* and *Indian* remain common in bureaucratic use (e.g., the

federally run Department of Indian Affairs and Northern Development, now known as Indigenous and Northern Affairs Canada, has for decades administered to all of Canada's band reserves in accordance with the federal Indian Act, as well as managed the national government's engagements with the Inuit-run territory Nunavut). *First Nations*, a term that refers to all non-Inuit, non-Métis Indigenous groups in Canada, was brought into common usage as a political term in the second half of the twentieth century, although it is not defined in Canadian law. Official band membership is typically referred to as *Indian status*, although the term *First Nations* has begun appearing more frequently in these contexts as federally registered "Indian bands" change their official names. In practice, many of the Gitxsan, Gitanyow, and Wet'suwet'en men and women I worked with used the terms *Indian*, *Native*, and *Aboriginal* interchangeably, a fact that I reflect in direct quotations throughout the book. While very few of my interlocutors used the term *Indigenous* to refer to themselves, this term was frequently used by some activists as a means of articulating their work with other globally distributed networks of Indigenous activism. Beyond these problematic terminologies, the technicalities of formal band membership have also long been a source of tension for Indigenous people in North America, particularly for those with parents from different recognized groups. Some individuals living on the Gitxsan territories may be recognized by their peers as a member of a particular Gitxsan house group, for instance, but have their federally recognized status associated with a Gitanyow band office (or vice versa) due to where their parents were born. For attention to the myriad tensions and jurisdictional ambiguities associated with membership claims in the contemporary era, see TallBear 2013; Simpson 2014.

3 Critical discussions of the original 1991 provincial decision in the *Delgamuukw and Gisday'wa* case have occupied dozens, if not hundreds, of scholarly books and articles. For a comprehensive overview of the case, its precedents, and the immediate responses of anthropologists, see Culhane 1998. For more recent perspectives on the aftermath of the decision and its appeals, see McCreary 2014; Napoleon 2013. Many Gitxsan, including all of my Gitxsan interlocutors and nearly all of my non-Indigenous interlocutors in British Columbia as well, refer to the Gitxsan and Wet'suwet'en land claims trials simply as "Delgamuukw," rather than including the first named Wet'suwet'en chief in the title. Rather than mirror this usage myself, I have chosen throughout this book to use *Delgamuukw and Gisday'wa* for all references to these trials in order to keep Wet'suwet'en involvement in view.

4 The confrontations that followed the 1988 blockades at Kispiox Bridge were hardly Gitxsan people's first experiences disrupting travel and transport through their territories to protest colonial rule. In 1872, Gitxsan people blocked fur traders and other settlers from traversing the Skeena River after a campfire abandoned by White traders and mining prospectors destroyed Kitsegulka village (Galois 1992). Two years before the Kispiox blockade, federal Canadian fisheries officials and officers of the Royal Canadian Mounted Police attempted to shut down a Gitxsan fishing camp and were pelted with marshmallows until they retreated (Sterritt 1989). In the summer of 1990, Gitxsan men and women, like people from many First Nations,

established numerous additional blockades in support of Kanehsatà:ke First Nations living on the Oka reserve in Quebec, whose protests against the construction of a golf course on their traditional territories had led to an armed standoff with police and military forces. While the original Kanehsatà:ke protests were concerned with the disruption of grave sites rather than with the destruction of old-growth forests, many subsequent journalists and scholars have cited the resulting standoff as a major inflection point in the War in the Woods. See Blomley 1996; Davey 2019.

Introduction

1 All of the people identified in this book by their first names only have been given pseudonyms. People identified by first and last names have asked that I use their real names.

2 On the origins, diversification, and continuing unfolding of Idle No More, see Dhillon 2017.

3 Darlene's exasperation with the many ways that Canadian journalists erase Indigenous histories and conflicts in much contemporary coverage of resource conflicts is a frustration that she shares with numerous critical media scholars. See in particular Callison and Young 2020.

4 Yielding as many as ninety million cubic meters of hemlock, spruce, pine, and cedar for foreign and domestic markets each year, the interior of British Columbia has for decades been the single largest source of lumber sold in the United States, and an increasingly major supplier for East Asia as well (Government of British Columbia 2017).

5 Since 1982, the government of Canada has been engaged in a series of lawsuits with the United States government over the methods that provincial governments employed for pricing timber harvested on public land, a saga collectively referenced in popular media as the "Softwood Lumber Dispute" (Zhang 2007). Canadian companies who exported timber to the United States, US trade officials argued, effectively benefited from unfair "subsidies" unavailable to US-based companies, the majority of which operated on private lands and sold timber on unprotected markets. While a tariff agreement was put into place in 2006, the expiration of this agreement in 2015 has initiated yet another phase of diplomatic conflict.

6 Both White- and First Nations–organized civil society groups have become increasingly central to resource management disputes throughout British Columbia in recent years. For a general overview of these shifts within the context of community forests, see McCarthy 2006. For the Gitxsan experience, see McCreary 2014.

7 While the 1997 Supreme Court of Canada decision in *Delgamuukw and Gisday'wa v. The Queen* nominally established the government's obligation to consult First Nations on *recognized* Aboriginal title lands, the obligation to consult on *claimed* lands was not established until the *Haida Nation* decision in 2004. For this reason, I use the term *negotiate* throughout most of the book to refer to the administrative

encounters that took place between First Nations representatives and provincial government officials, outside the ambit of formal recognition, between 1997 and 2004.

8 Within the forests of northwest British Columbia, the expansion of private expertise has been perhaps most visible in the transition away from state-directed, or "prescriptive" land use planning programs, toward a range of industry self-reporting practices initiated in 2002 as part of the provincial government's "results-based" management regulatory regime (Thielmann and Tollefson 2009).

9 While the Campbell government's earnest attempt to pass a Recognition and Reconciliation Act failed to gain substantial support from either First Nations representative groups or business leaders throughout the province, the increasingly severe warnings of the courts gradually convinced developers and government officials alike that their long-standing strategies of deferral and nonengagement would no longer protect them from future legal action from First Nations with outstanding land claims. See Wood and Rossiter 2011.

10 During the 1990s, the BC Forest Service supported several collaborative research projects between First Nations people and government scientists, including several multiyear studies of postfire succession dynamics in berry gathering areas and other Gitxsan harvesting sites. As I show in chapter 2, Gitxsan berry harvesting sites have been subject to a range of published studies. See, e.g., C. Burton 1999; P. J. Burton 1998; Trusler and L. M. Johnson 2008.

11 These numbers warrant some explanation. While provincial governments are the largest single landholders in several Canadian provinces, the federal government remains the largest landholder in the country as a whole thanks to its sprawling tenures in Yukon, Nunavut, and Northwest Territories. (For a more detailed breakdown of Canadian land ownership statistics, see the "Statistical Data" page on the Government of Canada website, https://cfs.nrcan.gc.ca/statsprofile.) By comparison, only the state governments of New York and Alaska own more than 15 percent of the lands within their borders.

12 Prior to the proclamation of British colonial rule over the region in the nineteenth century, visitors intending to travel or hunt in Gitxsan house territories were expected to seek permission from the chiefs of each house (Sterritt et al. 1998, 98–131). The complicated legal history of Canada's Crown land, including the procedures required to develop it, the "rights" of early Euro-Canadian settlers to preempt it, and the challenges First Nations groups have faced while attempting to use and reclaim it, is the subject of numerous books and articles. For a detailed discussion of the historical roots of the "free entry" system, see Dickerson 1992. For a discussion of the links between free entry and other historical developments in property law and expropriation in former British colonies, see Overstall 2005.

13 Increased attention to the violence done to First Nations groups and other Indigenous communities by bureaucratic categories—violence often enacted by anthropologists themselves (Kuper 2003; Simpson 2007; Starn 2011; see also V. Deloria 1988,

78–100)—has of late precipitated a resurgence of activism deliberately pitched outside the ambit of legal and bureaucratic legibility (Coulthard 2014; Simpson 2014).

14 Three separate treaties have been implemented through the BCTC process, including the Maa-nulth First Nations Treaty, which encompasses five separate First Nations. This number does not include the Nisga'a Final Agreement, which was negotiated outside the BCTC framework.

15 While treaty negotiations based on the land selection model have been carried out by provincially appointed officials, the actual process of extinguishing Aboriginal claims can only be administered by the federal government, through federal legislative processes. The 1997 *Delgamuukw and Gisday'wa* decision explicitly affirmed that the provincial government could not extinguish claims on its own.

16 Initially positioned by my interlocutors as a cheerfully naive American observer, I was often encouraged to view the unraveling of provincial support for research in the early 2000s as complementary to the "war on science" playing out during my main research period, a new "war" led by then prime minister Stephen Harper and his Conservative federal government of Canada. See, e.g., Peyton and Franks 2016.

17 Riles's typical usage of "technocracy" is considerably narrower than the one I am developing in this book. In *Collateral Knowledge*, Riles (2011) uses the term to describe the centralized, prescriptive regulatory system through which cohorts of government experts governed finance and banking in Japan up until the introduction of liberalizing reforms in the 1990s. "State knowledge—what I will call 'technocratic knowledge,'" she argues, "is indeed different from . . . private technical expertise" (85). Within Riles's framing, expert identities are much more closely aligned with institutional positions; while the relative authority exerted by different kinds of experts underwent radical changes during the period Riles investigates, she presents the nominal boundaries between public and private institutions as remaining discrete.

18 For a broader look at the constitutive roles played by rumor and violence in the manifestation of authority within other supposedly marginal practices and spaces, see Das and Poole 2004.

19 Even as the trials and related blockades were unfolding, some Gitxsan were actively experimenting with selective logging on their own territories (A. Mills 1994, 179).

20 In British Columbia and elsewhere, scholars have primarily sought to understand the effects of the neoliberalization of industrial forestry by tracking the rise of corporate power within governance processes previously managed by state agencies (see, e.g., McCarthy 2005, 2006; Brockington, Duffy, and Igoe 2008; Heynen et al. 2007; T. M. Li 2014).

21 Numerous scholars have critiqued the tendency of state officials in the United States and Canada to conflate social continuity with "tradition." See, e.g., Dombrowski 2001; Sider 2003; Bell 2016.

22 In recent years, Indigenous-led activism has brought these issues to the attention of broad audiences. Particularly during the still-ongoing Idle No More protests, which began in late 2012 and spanned all of Canada by early 2013, thousands of

First Nations activists in British Columbia and elsewhere questioned the long-term value of job training programs, development consultation procedures, and other government-run initiatives like those established during the War in the Woods (McCreary 2013a; Bell 2017). Since 2015, government-run capacity-building initiatives in Canada have been increasingly framed as official responses to the Government of Canada's Truth and Reconciliation Commission on Indian residential schools. While some Indigenous scholars and political leaders have commended this transition for emphasizing the role of social histories and collective healing in contemporary institution building, others have expressed concern about the ways that these programs have helped to mollify urgent and concrete political demands. In much the same way that government emphases on "recognition" during the 1990s failed to produce lasting economic change for First Nations communities, Dene theorist Glen Coulthard argues, the use of the concept of "reconciliation" as a tool for political dialogue offers "little insight into how to address the more overtly structural and/or economic features of social oppression" (Coulthard 2014, 34).

23 Newspaper articles and blog posts published by dissident chiefs during the office blockade and its aftermath broadcast the breadth of their alliance through a color-coded version of the original *Delgamuukw* map: white-colored house territories were for the GTS; yellow remained opposed (Gitxsan Unity Movement 2012b).

24 In 2013, GTS officials countered dissidents' attempts to dissolve the society by rewriting their bylaws to recruit new members from the remaining loyal house groups (*Spookw v. Gitxsan Treaty Society* [2015] BCCA 77 (Can. LII), J. A. Groberman).

1. Nostalgia

1 Nathan Cullen, Taylor Bachrach, and Irving Fox are all public figures, and thus I am using their real names. All of the other names of my interlocutors used in this chapter are pseudonyms.

2 Yes, the most widely used demonym for residents of Smithers, BC, is indeed *Smithereen*.

3 The BC Liberal Party and the federal Liberal Party are different entities with a long history of antagonism. Whereas BC NDP officials routinely caucus with their federal NDP colleagues, BC and federal Liberals have no such working relationship. On April 12, 2023, the party changed its name to BC United.

4 On the participation of First Nation communities in these reviews and protests, see McCreary and Milligan 2014.

5 This was the same contentious election that saw Stephen Harper and his Conservative Party win another term as leaders of federal parliament. It was also the first time that the NDP overtook the federal Liberal Party in a nationwide election.

6 Several of the fourteen original LRMPs were completed by government planners after community board members failed to reach consensus. Numerous groups saw their meetings devolve into acrimony. See Booth and Halseth 2011.