

1 **Laws, markets, and local politics drive outcomes of Minnesota’s county managed forests**

2 **Authors:**

3 Forrest Fleischman, University of Minnesota, Department of Forest Resources.

4 ffleisch@umn.edu

5 Marissa Schmitz, University of Minnesota, Department of Forest Resources marissa@umn.edu

6 Kelsey Poljacik, University of Minnesota, Department of Forest Resources. polja006@umn.edu

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13

14 **Abstract:** There are frequently calls to increase local government control over forests in the US.
15 Minnesota’s county forests contain approximately 30% of all local government managed forests
16 in the United States. These forests are managed in ways that protect public access while
17 providing a stable timber supply to mills. This happens because of the intersection of law,
18 markets, and local politics. County forests are legally obligated to provide revenue to local tax
19 districts while paying for management from money earned from timber sales. This pushes
20 counties towards managing with the goal of providing a stable revenue stream from their lands, a
21 goal which is supported by local politics in timber dependent counties. The result is that counties
22 are more production-oriented than other public forestland managers, however they provide more
23 consistent public access than private forest owners.

24 **Study Implications:** There are frequent discussions in the US of either turning over public lands
25 to local governments or purchasing private land to be managed by local governments for public
26 benefits. We show that local governments can manage forests professionally, providing a
27 consistent timber supply to local mills while maintaining recreational benefits to the public.
28 Other benefits and costs of local management are difficult to evaluate. This outcome is
29 dependent on the availability of robust timber markets, which may not exist in other parts of the
30 country, and makes county land management dependent on fluctuating commodity prices.

31

32 **Keywords:** County forests, community-based forest management, Minnesota, local control, land
33 tenure

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39 1.0 Introduction

40

41 There have long been calls to reduce federal control over public lands in the United States,
42 (Sedjo 2017; Fairfax et al. 1999; Freemuth 2018), and/or to increase local public authority over
43 the management of private forests (Ellefson et al. 2004; Willer, Collins-Anderson, and Todd
44 2021). Local governments may manage forests with greater local knowledge and more
45 responsiveness to local concerns (Koontz 2002; Mansuri and Rao 2013). While there is an
46 abundance of analysis on local government forestry in the developing world (Hajjar et al. 2020)
47 there are few studies of local forest governance in the US. The purpose of this paper is to
48 describe how local government forestry in the US works, and to understand why it works that
49 way.

50

51 Minnesota county land departments present an ideal case for this purpose, because they manage
52 approximately 2.5 million acres of forests across 15 counties, roughly 30% of all local
53 government owned forests in the US (Davis 2013). These forests dwarf those in recent studies of
54 US community forestry (Christoffersen et al. 2008; Danks and Jungwirth 2008; Cheng, Danks,
55 and Allred 2011). They thus provide a broader picture of how local forest management could
56 work. At the same time, their proximity to lands owned under other tenure systems facilitates
57 comparison to other types of landowners.

58

59 We have two objectives. First, we describe what county land management in Minnesota looks
60 like in practice, with an emphasis on tradeoffs between management objectives. Second, we
61 examine what aspects of county forestry lead to those outcomes, with a goal of understanding
62 whether the Minnesota experience could translate to local government-managed forests that
63 might be created in the future elsewhere in the US. Our findings highlight the centrality of
64 democratic responsiveness and public accountability in understanding the outcomes of local
65 forestry (Ribot, Lund, and Treue 2010; Agrawal and Ribot 1999). Responsiveness refers to the
66 extent to which authorities determine their actions based on their interaction with the public, and
67 accountability refers to the ways that the same public monitor authorities. We draw on interviews
68 with the heads of county land departments, as well as reviews of management plans and other
69 documents, to understand how responsiveness and accountability shape forest outcomes.

70

71 We find that Minnesota's county land departments produce substantial timber and recreation
72 benefits to local and regional economies. Relative to other public forest managers in the state of
73 Minnesota, county land managers have lower personnel costs, produce a more stable timber
74 output, and are more focused on revenue generation. When compared to state and federal land
75 managers, counties devote less attention to managing other forest values, such as wilderness,
76 biodiversity, or water quality, although we are not able to observe whether this difference in
77 management emphasis leads to different outcomes. Rather than being inevitable outcomes of
78 local control, these outcomes are the result of local forest managers who are accountable to legal
79 requirements to focus on revenue generation, responsive to local political support for extractive
80 industries, and can generate revenue from selling timber due to favorable local markets for forest
81 products. Our study thus suggests that changes in forest land tenure in the US towards local
82 government control would likely shift the focus of forest management, however this outcome
83 depends on local laws, politics, and markets.

84

1.1 The debate over forest ownership within the US

Public land management in the US has always been controversial. Public forests were originally conceived in the early 20th century as a way to prevent overharvesting: public lands would be managed by professionals committed to using forests for the “greatest good” through the new science of sustainable forest management (Wilkinson and Anderson 1985; Miller 2001). In the second half of the 20th Century communities near National Forests became dependent on resource extraction from those forests (Hirt 1994). When environmental laws restricted these extractive activities (Yaffee 1994; Hoberg 2001) there was a backlash among extraction dependent communities (Babbitt 1982). This led to proposals to privatize public lands (Stroup 1998), turn National Forests over to states (Vincent and Wyatt 2016) or counties (Reed 1993) or replicate aspects of the state school trust system (Souder, Fairfax, and Others 1996). These diverse proposals share a common interest in local control as a way to increase resource extraction (Koontz 2002; Fleischman 2017).

Private ownership has also attracted critiques. Small nonindustrial private forests often lack professionally prepared management plans, potentially leading to poorly planned harvests that may be unsustainable (Brown, Kilgore, and Hibbard 2010). Environmentalists have long called for restrictions on environmentally damaging practices on large private forest estates (Lansky 1992; Ellefson et al. 2004). The disintegration of large vertically integrated timber companies in the last 30 years has increased concern about industrial forests being managing for short-term profit rather than long-term sustainability (Kay 2018; Gunnoe 2014). As a result, states have increased regulation of private forest management, and there has been increasing interest in alternative governance tools including certification (Ma et al. 2012) and land trusts (Ruseva and Fischer 2013).

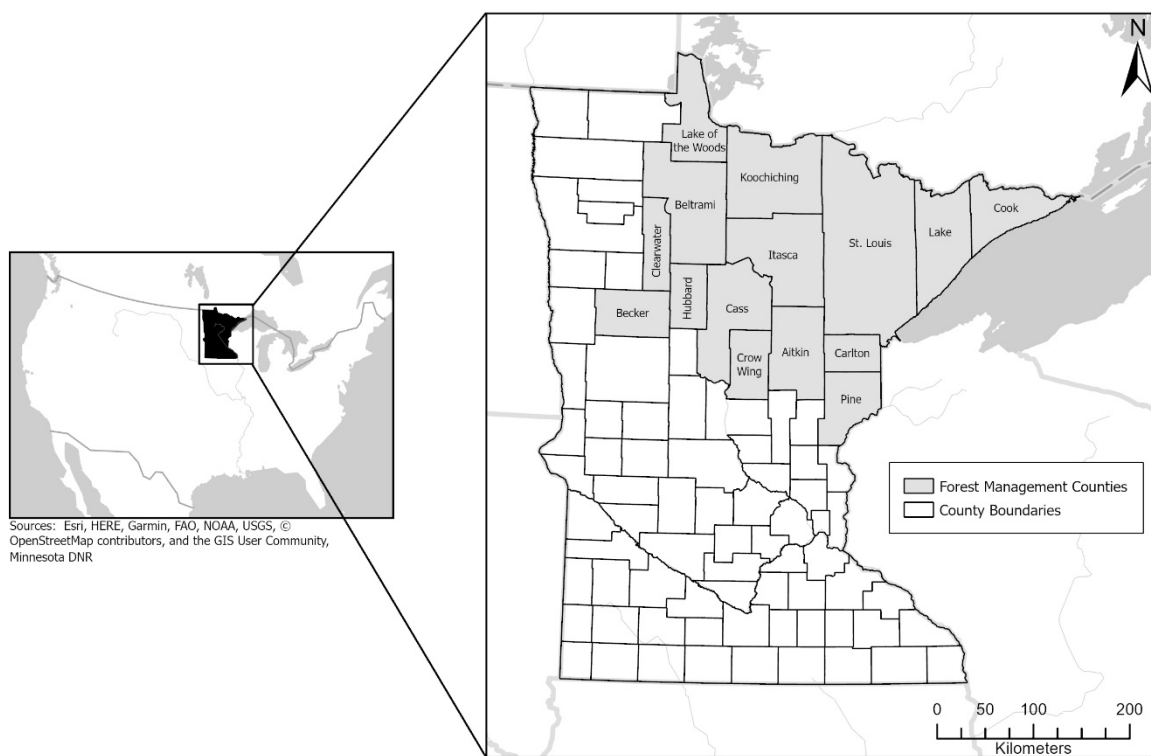
Local government managed forests might present an alternative, but in the US are uncommon outside of Minnesota and Wisconsin (Christoffersen et al. 2008) and rarely studied (Davis 2013). Those studies that exist provide conflicting lessons. Studies of state forests and of Wisconsin county forests find them more oriented towards economic development and less oriented towards preservation than the United States Forest Service (USFS) (Souder, Fairfax, and Others 1996; Koontz 2002; Davis 2008, 2013). In contrast, some studies of tribal forests find them balancing profitable timber programs and high levels of biodiversity (Waller and Reo 2018). A few municipalities in the US own forests but these are small and face challenges in terms of maintaining operational efficiency (Cheng, Danks, and Allred 2011; Danks and Jungwirth 2008; Christoffersen et al. 2008). Studies of local government forests outside of the US do not find consistent impacts of local control, highlighting the role of accountability and responsiveness in determining outcomes (Agrawal and Ribot 1999; Ribot, Lund, and Treue 2010; Hajjar et al. 2020).

1.2 Minnesota’s County forests

The heavily forested northeastern region of Minnesota has one of the most diverse land tenure systems in the US (see figures 1 & 2), with two national forests, one of the largest state forest systems in the country, county forests, and extensive areas of private lands in a mix of small and large holdings, alongside significant tribal land and overlapping treaty rights. County lands are

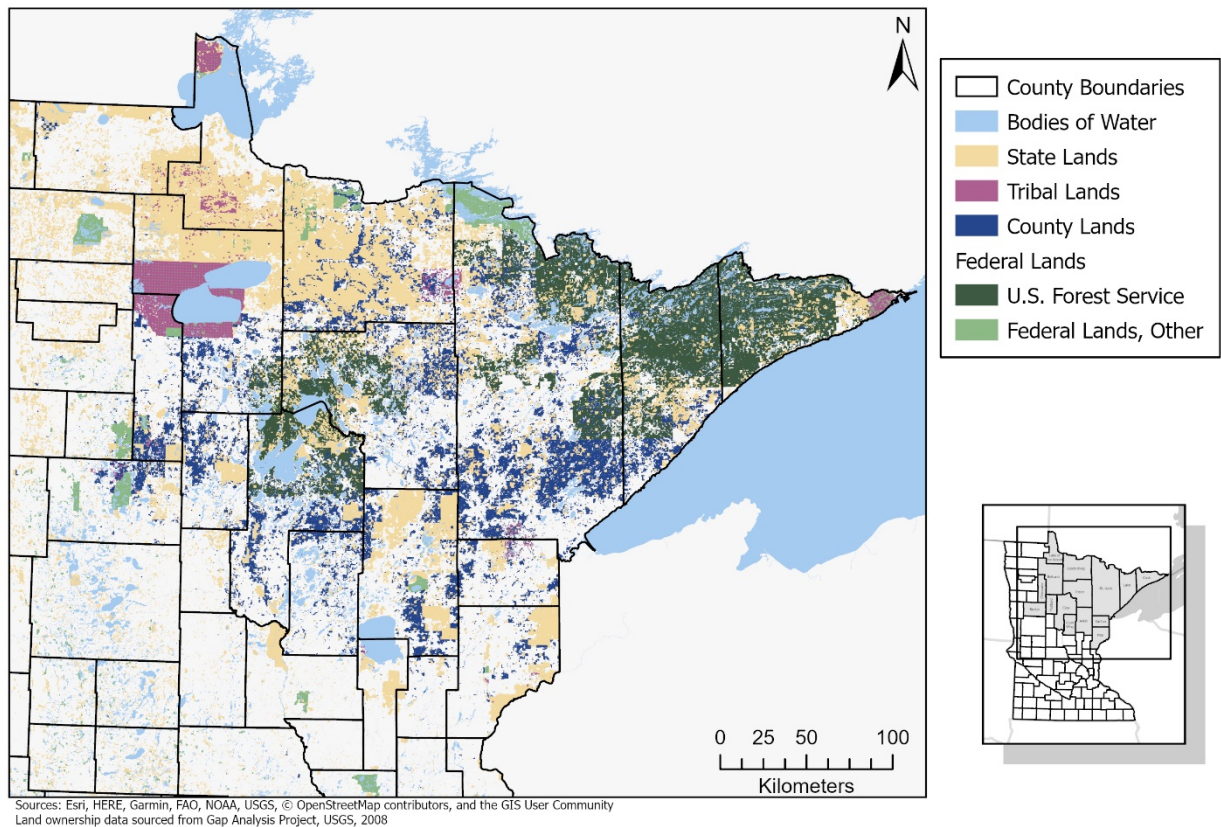
131 mostly derived from tax delinquency that followed the heavy logging of the late 19th and early
132 20th centuries. Once forests were cleared of valuable timber, harsh climate and poor soils made
133 smallholder farming difficult (Bachmann 1969; Dana, Allison, and Cunningham 1960), while
134 destructive forest fires destroyed what was left of the standing timber (Bachmann 1969; Conzet
135 and Schmitz 1929; Dana, Allison, and Cunningham 1960). Property tax-dependent local
136 governments in the region faced a crisis throughout the 1920s and 1930s, as they were unable to
137 generate revenue from cut-over timberlands, and unable to sell land that lacked timber or
138 agricultural potential (Bachmann 1969; Dana, Allison, and Cunningham 1960; Barlowe 1951;
139 Schneider 1953; Fernholz et al. 2014).

140
141 Figure 1: Location of the 15 counties that manage tax-forfeited forest land in Minnesota



142
143

144 Figure 2: Public land holdings in Northeastern Minnesota, county-owned lands are dark blue.



145
146

147 In 1935 the state of Minnesota turned the management of nearly 5 million acres of tax- forfeited
148 lands over to the counties (Barlowe 1951; Schneider 1953). Today county-administered forests
149 amount to over 15% of total state timberland, with 2.5 million acres (the state manages 3.7
150 million acres, the USFS 1.8 million acres, and tribes and private landowners 7.8 million acres).

151
152 Minnesota statute 282 regulates the management of tax forfeited lands in the state of Minnesota.
153 The state holds title to all tax forfeited lands, however statute 282 gives the county board (the
154 officials elected by the residents of the county to run the county government) the authority to
155 appoint a land commissioner and assistants to manage and sell timber, minerals, land, and other
156 products and service (e.g. campgrounds, cabin leases) under the direction of the county board
157 and county administrators. 15 Minnesota counties have land commissioners, nearly all of whom
158 are foresters by training. The land departments vary in size depending on the land base – several
159 have only a couple employees, while St. Louis county, with nearly 1 million acres of land, has
160 over 70 employees. In some counties the job of land commissioner is combined with other
161 responsibilities, eg maintenance of county parks. Land department staff, who work under the
162 direction of the land commissioner, have considerable leeway in making on-the-ground decisions
163 by, for example, designing site specific silvicultural prescriptions, however the land
164 commissioner is responsible for translating the direction of legal authorities and elected officials
165 into action.

166

167 Statute 282 gives county boards the choice to sell or retain land, and to develop revenue from
 168 sale of forest products and services. While nearly all counties have timber sale programs, and
 169 several counties hold valuable mineral rights, other uses are developed in an idiosyncratic
 170 fashion and constitute a minor revenue source. All counties provide public access to their lands
 171 and cooperate with recreational users – for example most counties collaborate with local
 172 snowmobile clubs to maintain snowmobile trails. The land departments do not receive any
 173 funding from the county general fund, but instead use profits from land, mining, and timber sales
 174 to fund their operations. Profits after management expenses are returned to the county and other
 175 taxing districts (e.g. city, school district, etc.) in which the land is located.

176
 177 Table 1. Distribution of land ownership in 15 counties with significant county land holdings in
 178 Minnesota

County Name	Total	Federal	State	County	Private	Not Forested
Aitkin	1,285,321	10842	310,505	200,571	329,453	433,951
Becker	903,030	31001	52,267	65,672	173,899	580,191
Beltrami	1,950,105	65557	347,464	147,364	457,231	932,488
Carlton	524,678	0	82,140	47,334	198,670	196,533
Cass	1,531,322	266130	150,906	199,872	236,351	678,063
Clearwater	652,483	2626	53,602	67,113	188,513	340,629
Cook	1,072,076	648854	130,906	-	156,587	135,729
Crow Wing	740,047	0	16,807	85,579	270,576	367,083
Hubbard	615,756	0	72,702	121,676	191,826	229,552
Itasca	1,923,270	258900	288,569	273,820	569,628	532,354
Koochiching	2,024,616	20980	991,831	246,959	478,950	285,897
Lake	1,459,480	664774	198,409	181,941	238,106	176,250
Lake of the Woods	1153707	25759	332343	-	198775	596,831
Pine	916,374	0	155,830	41,412	364,053	355,079
St. Louis	4,310,141	850,628	461,881	857,672	1,033,079	1,106,881

179
 180 Davis’ (2013) study of Wisconsin’s county forests is the only recent paper examining county-
 181 managed forests in the US. Davis finds that, consistent with theories from Koontz (2002), county
 182 forests are more extraction-oriented than state or federal forests. County foresters have greater
 183 flexibility and are less engaged with environmental advocacy groups than state or USFS
 184 managers. Davis includes some comparative data from Minnesota, but not enough to determine
 185 how Minnesota’s forests compare to those in Wisconsin. We build on Davis’ work by expanding
 186 the scope of study to a second state, as well as by conducting interviews with key informants
 187 which help to illuminate the reasons for county actions. Our paper extends the work of Davis and
 188 Koontz by building on their insights and the direct experience of county forest managers to
 189 examine the reasons why local government forest management is more production oriented than
 190 neighboring public forests.

192 2.0 Methods

193

194 This study draws on a mixture of interviews and review of forest management plans, county
195 reports, and forest certification documents from all 15 county land departments in Minnesota.
196 These documents contained information on forest types, competing land use pressures,
197 management goals and objectives, commercial operations such as the amount of timber sold,
198 which loggers and mills purchased and processed the wood, other marketing opportunities
199 pursued by the counties, including participation in third-party certification schemes, federal,
200 state, and/or local-level land management regulations; and human resources, including staffing
201 levels, staff expertise, and the organization of internal hierarchies. We also collected analogous
202 information on the other major public forestland managers in Minnesota: USFS and the
203 Minnesota Department of Natural Resources (MN DNR) to facilitate comparison. These
204 documents were organized and coded in Atlas.ti following techniques outlined by Saldana
205 (2015). Codes were used to develop an initial list of themes and to formulate our interview guide.
206 All documents were reviewed by two coauthors and both codes and themes were discussed for
207 researcher triangulation.

208

209 In summer 2018 we conducted semi-structured interviews with 11 of the 15 county land
210 commissioners (i.e. appointed directors of the county land departments). We were unable to
211 reach the remaining four land commissioners. We interviewed land commissioners because the
212 directors of government departments are responsible for making management decisions and,
213 because of the small size of land departments, land commissioners are well positioned to
214 understand the actions of the department as a whole, including their subordinate employees.
215 Interviews lasted between thirty minutes and one hour. We used Interview guides (See Appendix
216 A) to ensure that key questions were asked of each participant, e.g. “Can you describe your goals
217 and objectives for forest management?” However, we also gave participants the opportunity to
218 raise additional topics. In addition, the information available in the county documents described
219 above was not consistently available for all counties because there are not consistent reporting
220 standards, so during interviews we followed up with requests for further documentation. We
221 transcribed the interviews and, again two coauthors coded them twice in Atlas.ti following
222 Saldana (2015).

223

224 We augmented our interviews by attending bi-monthly meetings of the Minnesota Association of
225 County Land Commissioners (a forum attended by all 15 commissioners). We reviewed our
226 initial findings at one of these meetings with the Land Commissioners, and held an hour-long
227 discussion with all land commissioners about our findings, adding nuance and clarity to our
228 results.

229

230 3.0 Results

231

232 Our results are organized around 3 themes. First, county land departments are responsive to local
233 constituents. Second, they are accountable for their financial performance, which is tied to timber
234 markets. Third, county land departments’ local accountability and responsiveness determine how
235 they interact with stakeholders. These relationships are the result of the interaction of laws,
236 markets, and local politics, and explain county land departments’ focus on timber management.

237

238 3.1 County land departments are responsive to local constituents

239

240 Local politics plays a central role in county forest decision-making. Forestland owning counties
241 are predominantly rural with limited tax bases, and are economically dependent to varying
242 degrees on logging, mining, and tourism (Bergstrom 2019). This economic profile influences
243 how county boards and land commissioners view their land:

244

245 “For us since we’ve got such a large land base it does put us in a unique situation where
246 you can really play an important part in that flow of timber to industry. In this region we
247 have a stabilizing effect as timber prices fluctuate and go up and down. As a public agency
248 we continue to put up timber where sometimes you’ll see the private folks hold and play
249 the markets a little bit.” (Interview 1)

250

251 Land commissioners have a political imperative to support loggers and mills, both because
252 they are community members who provide local employment and pay local taxes, and
253 because they provide future markets for wood, which land departments depend on for their
254 existence. On the other hand, county land departments devote significant resources to
255 recreational infrastructure that earns little revenue. That county boards approve this spending
256 implies that county boards recognize the value that recreational activities bring to their
257 counties, both in terms of enhancing the quality of life of residents, and also in terms of
258 attracting tourism which in turn increases property and sales tax revenues. Although tourism
259 and timber industries have a history of conflict over the management of national and state
260 lands in the region (Searle 1977; Jaakko Pöyry Consulting 1994; Bergstrom 2019), such
261 conflicts are rare on county land:

262

263 [Our county] is a rural county, with citizens that throughout time have been tied back to
264 timber. Whether it was a family member who worked in the woods, trucked or worked in
265 the mills. There used to be more mills around here and the mills actually employed a lot
266 more people, so going back through time everybody had some sort of connection to
267 somebody who worked in the timber industry. And I would say lately that connection is
268 dwindling. So historically it has been a very strong pro-timber county ... We don’t have
269 people here where it is a foreign concept ... They understand the importance. (Interview 3)

270

271 The small scale of county government and long tenure of county foresters means that foresters
272 have close relationships with local interests. “Any citizen can come to the board every other
273 week and voice their displeasure to the county board because the county board always opens
274 up for citizens’ input.” Though he added that: “We haven’t had any in a long time. Things
275 seem to go relatively smooth” (Interview 5). Another stated, “We don’t have a lot of conflict
276 or resistance on what we do as far as how we manage the woods. We’ve been blessed on that”
277 (Interview 9). Perhaps the most common theme for public engagement was that county offices
278 had ‘open door’ policies, meaning that interested parties were welcome to call, email, or visit
279 their local land department anytime. One land commissioner described this as his most
280 common form of public input, because: “That’s the way people are communicating [today]”
281 (Interview 4).

282

283 3.2 County land departments are accountable for financial performance

284
285 County land departments are accountable for their financial performance to local elected
286 officials. Although the state law that governs county forests, Statute 282, requires that retained
287 lands be managed for the financial benefit of taxing districts, the language is vague: elected
288 officials and their employees determine how to achieve these benefits. Nonetheless, land
289 commissioners share a common vision of how to benefit the taxing districts. As one
290 commissioner told us:

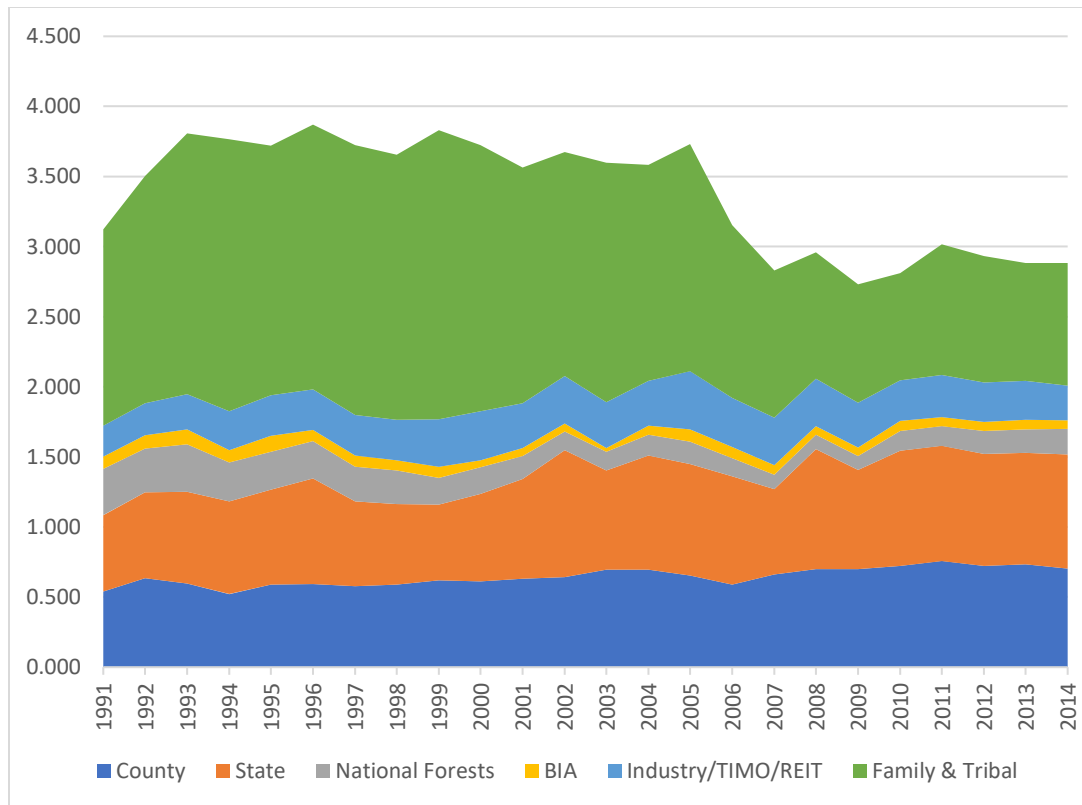
291
292 “Our [forest management] goal is to utilize everything, to maximize utilization for the
293 benefit not only for the ground we are working on ... but also to make sure we are
294 providing revenue to the tax forfeit trust. That’s a part of one of our biggest [statutory]
295 responsibilities, so that is not something that we can take lightly.” (Interview 3)
296 “In 2016 we distributed over \$300,000 back to the school districts ... If we can pay for five
297 teachers within our county with some of our revenues from our timber sales, I think that’s
298 pretty cool. I think it takes that right back to the local-level where people understand it and
299 understand what we’re doing.” (Interview 4)

300
301 The importance of revenue generation as a central goal of county land departments is reflected
302 in Land Commissioners’ frequent invocation of the idea that they operate on “enterprise
303 principles,” which they liken to private industrial forest managers.

304
305 “For us, [management activities] have to make financial sense. We can’t just do things
306 because it’s a feel good. Everything here is because of us selling wood and selling land.
307 We don’t get any tax money. We are totally self-supported. (Interview 6)”

308
309 Counties produce a large quantity of timber per acre and a steady quantity of timber with little
310 sensitivity to market conditions. These patterns are best seen in comparison to other land
311 managers. Figure 3 presents annual harvest data for all land tenure types in Minnesota from
312 1990-2015. Direct per acre comparisons across land ownerships are complicated by the fact that
313 site quality is not independent from land ownership. For example, for historical reasons the
314 Minnesota DNR disproportionately owns wetlands which produce less timber per acre.
315 Nonetheless, it is apparent that harvest levels on county land are high and steady, while other
316 landowners have greater fluctuations in their harvest levels that respond to changing markets.
317 Two counties own economically significant mineral rights, however our focus is on forests, so
318 we do not examine minerals management further.

319
320 Figure 3. Timber harvested (million board feet) for different types of land in Minnesota, 1991-
321 2014 (data provided by MN DNR).



322
323

324 The focus on economic production can also be seen in more subtle management decisions: most
 325 county land departments harvest aspen, one of the most common species in Minnesota forests,
 326 near the optimal harvest age of 40 years (De Pellegrin Llorente et al. 2018), while on state and
 327 federal lands, older forests are valued and aspen stands are allowed to lose commercial value
 328 (aspen tends to rot and lose value as it ages) in order to achieve ecological benefits. One land
 329 commissioner, in a response that was typical of others, characterized his forest management as
 330 “primarily geared toward an economic rotation age,” particularly in contrast to state and federal
 331 neighbors, though he emphasized that this was done in ways that were “...socially,
 332 environmentally, and economically responsible” (Interview 3). Reflecting the timber focus,
 333 county management plans are simpler and shorter than equivalent state or federal documents.
 334

335 It is difficult to evaluate county forests’ production of other forest benefits. Counties’ long
 336 history of forest certification demonstrates that counties can be innovative and are viewed by
 337 outsiders as sustainable managers: the first large public organization in the US to receive Forest
 338 Stewardship Council certification for their forest practices was the Aitkin County Land
 339 Department in 1997 (Mater et al. 1999), and most counties have at some point been certified
 340 either with the Forest Stewardship Council and/or the Sustainable Forestry Initiative, although
 341 some have dropped certification in recent years due to limited market benefits. Data about the
 342 protection of wildlife or biodiversity, water resources, or recreational activities on county lands
 343 are not readily available. Several counties reported that recreational activities had grown in
 344 importance in the last decade, resulting in adding full-time recreation staff. Although recreational
 345 activities sometimes conflict with timber harvest, land commissioners reported that these
 346 conflicts were rare, and found recreational investments worthwhile because they could bring in
 347 some revenue directly (e.g. through cabin & hunting leases), because of the importance of

348 recreation to the regional economy, and because recreation helped build political support in the
349 local community for public land ownership. Brown et al. (2010) find that land that is sold by
350 counties tends not to be under professional management and is more likely to be fragmented
351 when compared to land that is retained by counties, however most sold land remains forested.

352

353 3.3 Accountability and responsiveness shape outcomes.

354

355 County land departments can make quick decisions because of their financial independence,
356 small size, close relationship with their supervisors on county boards, and lack of red tape. As
357 one land commissioner stated: "...we can move pretty fast if we need to, with the county
358 board support... We are able to act on things much faster. We don't have a NEPA process that
359 we have to go through. We don't have all the divisions the DNR has that reviews, Fisheries,
360 Wildlife, Eco-services. And so without that bureaucracy we are able to work more efficiently"
361 (Interview 3). Or as another said, "You can plan a project and essentially if you budget for it,
362 you're pretty much good to go" (Interview 5).

363

364 Most land department employees are foresters, although larger departments have recreation, GIS,
365 and minerals specialists. Land departments employ few wildlife biologists, water resource
366 experts, or specialists in other ecosystem services, reflecting a focus on those aspects of forests
367 which can be directly translated into revenue for taxing districts, as opposed to those whose
368 benefits to society may be indirect. County land departments lack ethnic and racial diversity and
369 are mostly staffed by men. Only one of 15 land commissioners is a woman, and all are white.
370 County land departments operate with far fewer staff per hectare than state and federal agencies.
371 For example, while the US Forest Service and the counties manage approximately equal areas in
372 Minnesota, county land departments employ about 150 people across all 15 counties, whereas
373 the US Forest Service has over 400 employees in Minnesota.

374

375 County land department employees have low turnover, enabling them to build strong local
376 relationships. Land commissioners reported that they built strong relationships with local
377 loggers because foresters could take greater ownership over all phases of timber sales,
378 including communication with loggers rather than relying on a complex bureaucracy, as is the
379 case for larger public agencies. This was said to be mutually beneficial—with counties seeing
380 more successful timber auctions, while loggers appreciate greater reliability:

381

382 [Loggers] often come to me and say, 'We like working with your foresters,
383 because they're very clear in what they want and they're consistent. And we know
384 what we can expect from them.' Which means to me, maybe with other agencies,
385 they're not getting that same type of service. (Interview 2)

386

387 Another land commissioner explained that loggers preferred having 'local' decision makers:

388

389 I'd like to say that counties are easier to work with. So like if a logger has an
390 issue, it would be easier to get his issue taken care of through the county,
391 compared to, like, the state, just because we're local. We don't have to go all the
392 way to St. Paul to make the decision. (Interview 6)

393

394 On the other hand, small departments limit capacity and expertise, and reduce access to tools
395 such as forest inventory modeling. Some land commissioners described doing their own office
396 administration, managing large acreages with few foresters, or balancing multiple
397 responsibilities much like ‘twirling plates’ (Interview 3). Land commissioners can overcome
398 capacity constraints through collaboration with other agencies, NGOs, and/or tribes. One land
399 commissioner said that collaboration allowed his department to ‘do bigger things,’ such as
400 moose habitat restoration (Interview 6). Land commissioners also noted that they leveraged
401 each other as sources of information through semi-monthly meetings and regular phone and
402 email communication.

403
404 Although conflict over county land management was reported to be uncommon, the most
405 common conflicts we heard about related to the size of county forests. Statute 282 presents a
406 dilemma to counties: should they sell land, returning it to the tax rolls, or retain the land &
407 manage it for public benefit? During the early period of county land departments, counties
408 focused on selling their land (Barlowe 1951), but there was a shift towards retention in the 1970s
409 (Hacker 1992). Land commissioners report that county boards are influenced by the extent of
410 public land in their counties: in counties that have extensive public lands, boards are often in
411 favor of selling some county land to increase the county’s private land tax base. By contrast, in
412 counties with less public land, keeping land public is seen to enhance recreation-based tourism.
413 Land commissioners educate county elected officials about the benefits of public management,
414 and reference recent academic studies comparing the costs and benefits of land retention. These
415 studies emphasized benefits of county lands in terms of recreational access, professionalization
416 of forest management, and stabilization of timber supply (Brown et al. 2010; Ellefson and
417 McKay 1999). Land commissioners reported that these arguments were typically effective,
418 particularly when combined with the delivery of revenue. “They see a substantial check,” one
419 explained, “and they don’t want to see it go away” (Interview 11). These arguments are often
420 repeated when new boards are elected.

421
422 County land managers promote the value of their work to the public through public speaking,
423 school visits, field tours, and delivering money to taxing districts. They also promote their
424 work to county boards and other county departments:

425
426 “Part of our mission is to make sure the board and county administration understand the
427 importance of retaining this land base to provide raw materials for the mills and to attract
428 mills into the area. We can maintain our wood basket, if you will, to produce forest
429 products and gravel and the recreational opportunities etc. Some people out there don’t
430 understand why we have such a huge land base and there are pressures to sell more land,
431 but part of our job is that we need to create that balance.” (Interview 1)

432
433 Land commissioners did not report any engagement with regional or national environmental
434 groups that are heavily involved in state and federal land management in the region, although
435 one land commissioner located that there was a “green faction” in a college town in his county
436 which he had to take into account. This is consistent with Davis’ (2013) findings for
437 Wisconsin. We did not conduct interviews with these organizations to understand why they do
438 not engage with county land departments. County land commissioners did mention several
439 ways that they cooperate with tribes, including both in the management of treaty rights on

440 county land, as well as in engaging in land exchanges within reservation boundaries to help
441 tribes consolidate their holdings. While county land commissioners described these
442 relationships as cooperative, we did not conduct interviews with tribal leaders or members to
443 understand tribal attitudes towards county land management.

444
445

446 4.0 Discussion

447

448 We return to the questions that guide this research: what does county forestry in Minnesota look
449 like in practice, and why?

450 4.1 Counties are professional managers and focus on timber production

451

452 Our study confirms earlier studies that find that more local control over forestry decision-making
453 within the US favors timber production over other values (Koontz 2002; Davis 2013, 2008).

454 Counties manage land professionally and are effective at achieving legally prescribed forestry
455 goals, which in Minnesota emphasize revenue generation. The data we analyzed demonstrated
456 that counties provide a stable source of timber to wood products markets & a significant source
457 of revenue to local governments. The comparability of this revenue stream to taxing private land
458 is not clear (see Ellefson & McKay 1999 and Brown et al. 2010 for further discussion of this
459 issue). County land management also provides a variety of other forest benefits, notably
460 including recreation, although these are difficult to quantify (Brown et al. 2010).

461

462 4.2 Counties provide a unique mix of benefits

463

464 Minnesota county forests differ from neighboring state, federal, and private lands in several
465 ways. Unlike state and federal land managers, (Tipple and Wellman 1991; Koontz 2007), county
466 forests generally lack specialized staff focused on wildlife or water resources. This may mean
467 they are less effective at protecting these resources, although a recent study finds that counties
468 are making similar silvicultural choices to neighboring state and federal lands, which may result
469 in similar wildlife and water quality benefits (Windmuller-Campione et al. 2020). At the same
470 time, the lack of resource specialists reduces personnel costs – counties employ fewer staff per
471 acre than state or federal agencies. If counties are equally effective at protecting non-timber
472 benefits, they might provide a lower cost alternative, however if they are less effective, it may
473 indicate tradeoffs between forest management goals, as well as a need for public investment.
474 Counties might focus more on broader ecosystem benefits if they were required to by law, but
475 this would require funding that wasn't dependent on timber revenue – for example payments for
476 ecosystem service provision, or the use of tax revenue to pay for county forests, as is done for
477 state and national forests.

478

479 County lands provide ample recreational opportunities, with a focus on balancing motorized and
480 unmotorized recreation according to local demands. This is similar to state lands, but contrasts
481 with National Forests, which in Minnesota manage the Boundary Waters Canoe Area Wilderness
482 which restricts most extractive activities, emphasizes unmotorized recreation, and draws visitors
483 from farther away. Counties also contrast with private lands in that all county lands are publicly
484 accessible, while most private lands are closed. Brown et al. (2010) estimate the value of public

485 access hunting on county land as “nearly 90% of the land’s fee value,” and hunting is only one of
486 many recreational uses.

487
488 Counties also differ from most private landowners in that they provide a consistent timber
489 supply, regardless of market conditions. County forest managers invoke the concept of
490 “enterprise principles” to imply that they operate similarly to private enterprises because of their
491 fiduciary responsibilities to taxing districts. However Statute 282 does not provide a specific
492 standard for evaluating the return to taxing districts, and county land managers speak of
493 maximizing *utilization* of resources as opposed to *revenue*. Maximizing revenue might involve
494 selling less when prices are low (or alternatively, selling more when prices are low to provide
495 consistent revenue). Our data are insufficient to explain this difference with private landowners.
496 Land commissioners may believe that long-run revenue is maximized by harvesting on a regular
497 rotation, regardless of price. Alternatively, land commissioners may be seeking to insure the
498 stability of the timber industry in the region by providing loggers and mills with a steady supply.
499 A stable timber industry, in turn, provides economic stability to the counties. This would be an
500 interesting area for future research.

501
502 4.3 Counties are unique because of law, market conditions, and local politics

503
504 Statute 282 mandates that counties earn revenue for taxing districts and pay for their expenses
505 out of their earnings. This contrasts with most other public agencies, who pay their expenses out
506 of appropriated general funds. This places significant constraints on county land departments: In
507 order to exist, they must turn a profit, and profits are dependent on a collaborative relationship
508 with the timber industry, as well as on the existence of favorable market conditions which make
509 wood sales profitable. Unlike most public land managers in the US, county lands don’t have
510 explicit legal requirements to protect wildlife, biodiversity, water, or other ecosystem values, and
511 as a result, they do not have staffs that specialize in protecting these resources, although their
512 certifications imply that these resources are managed sustainably. At the same time their small
513 size allows county land departments greater freedom than other public land managers to act
514 quickly & innovate.

515
516 Second, county land managers make decisions that are shaped by local politics, Local politics
517 emphasize the value of timber production, revenue generation, and locally valued recreational
518 opportunities. Regional and national environmental groups that emphasize wilderness protection
519 or biodiversity conservation do not engage with county land departments. A recent study in
520 Wisconsin found that rural residents had similar attitudes towards the management of county,
521 state, and federal lands (Floress et al. 2019). Thus differences in the political influences on
522 county lands (versus state and federal lands) may be the result of more distant stakeholders being
523 more engaged in the management of state and federal lands. Again, understanding how diverse
524 stakeholders relate to different landownerships in Minnesota would be a fruitful avenue for
525 future research.

526
527 5.0 Conclusion

528
529 We set out to understand how county forests are managed to inform broader debates about land
530 tenure in the US and globally. Our results are consistent with the broader literature: Local

531 government ownership is expected to lead to a greater focus on economic development, and less
532 focus on other broader interests (Peterson 1995; Koontz 2002; Davis 2013). Minnesota's county
533 forests are managed with a focus on economic returns and devote less staff attention to other
534 ecosystem values than neighboring state and federal agencies.

535
536 However careful attention to the interplay of laws, markets, and local politics, as mediated
537 through relationships of responsiveness and accountability show that these outcomes are not
538 inevitable results of local control. Instead they are the product of responsiveness to local politics
539 that favor timber production and accountability for financial performance that is prescribed by
540 law and is supported by the existence of strong timber markets. Different legal mandates, local
541 politics, or market conditions could lead counties towards different forest management. For
542 example, counties might generate revenue from ecosystem service markets instead of timber, or
543 use general fund dollars to support more preservation oriented forestry. It is difficult to imagine
544 Minnesota-style county forest management in parts of the intermountain west where "local
545 control" has been a political rallying cry, because markets for forest products in this region are
546 limited – counties in this region might have to appropriate tax revenues from their general fund
547 in order to have locally managed lands. Minnesota counties may face challenges in the future due
548 to changes in timber markets, rural demographics, or climate which alter the market, legal, and
549 political basis of this governance system.

550
551 Advocates for transferring US public lands to local governments have often been motivated by a
552 desire to see public lands (particularly national forests) managed in a more economically
553 aggressive fashion. Our results suggest that they may be correct about the effects of such a
554 reform: county lands appear to be managed with a greater focus on timber production, and less
555 focus on some other resource values, than other public lands in Minnesota. At the same time,
556 advocates for more sustainable private land forestry have suggested that local governments might
557 be better suited to manage forests in the public interest. We find that relative to private lands,
558 county lands offer significant public recreational benefits without obvious losses in other
559 resource values. But our research also shows that this is not the result of local control per se, but
560 rather of the interaction of local control with markets, laws, and politics. Any attempt to change
561 land tenure arrangements must thus think carefully about how laws governing public land
562 ownership shape forest outcomes.

563
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695
696

697 Appendix A: Interview Guide
698
699 Tell me about your county - what about it is distinct from other county land departments?
700
701 Things unique about the county (economic/geographic): how do these affect forest
702 management?
703 o Recreation/Mining/Land use pressures, e.g. parcelization/ non-timber income streams
704 o Other land uses that factor into forest management?
705 Aspects of the land - productivity, forest types, etc.
706 Management style/focus
707 Aspects of the history of land acquisition & sale that is unique to the county
708
709 What is your relationship like with loggers?
710 o Do you have a sense of the health of the logger workforce?
711
712 About their county board
713 o Who is on it
714 o What are the dynamics? What are the 'political' issues?
715 Where do the profits go?
716
717 How do they engage the public?
718 o Formal process for this?
719 o Informal: In what ways do they hear feedback on their land management?
720
721 What are the different reactions they get on their management?
722 What are your markets?
723 o Where does your wood go?
724 o Strength and reliability of those markets?
725 Relationship with mills?
726
727 Labor/Staffing
728 Number & type of staff
729 o Challenges regarding recruitment?
730 o How have roles of staff changed/will change?
731 o How does staffing capacity impact management?
732
733 Certification—will they maintain this?
734 What services do they contract out & how has this changed?
735 What challenges do you face? What major opportunities are
736
737 History of their land acquisition
738 o When and why did it go tax forfeit
739 o Who owned it previously
740 o When did they start managing it as opposed to trying to sell it?
741 o Why did they make this change?
742

743 How is county land management different from or similar to management of other
744 lands (private, state or federal)?
745 o In terms of their goals and objectives
746 o In terms of how they make decisions
747 o What are the challenges? (of county land management)
748 o What are the opportunities? (of county land management)
749
750 How does the million cord study affect how you manage?
751 o How has declining production on federal and DNR land affected their
752 management? (pressure to produce for industry?)
753
754 Are there differences between counties?
755 o In terms of their goals/objectives
756 o How they manage
757 o Other differences? (beyond forest type, markets, geography)
758
759 How have they been affected by broader changes in the industry?
760 o Mill closures (e.g. Blandin Machine)
761 o Restructuring of industrial land—how has this affected who bids on their
762 stumpage or level of level of competition? More industry bids?
763 o Fragmentation of former industrial land? How does this affect them?
764
765 What tribal interaction do they have?
766
767 What is their outlook for the future (forest industry healthy)?
768 o What would be problematic (policy, mill closure related, market changes)
769 o What are they optimistic about?
770
771 Management Plan Monitoring/Updating:
772 o How often is the management plan updated?
773 o Citizen oversight/involvement?
774
775 Things I have missed?
776
777 Others I should talk to?