

Economics of Property Law

Dean Lueck

May 18, 2011

ESNIE - Corsica

Corsica – A Big Chunk of Property



Lots of “stuff” that goes with this land -- sea, fish, mountains, water, minerals, forests, animals (wild & domestic), fields .

..

- How should be owned? 1 owner of the ‘fee?’ 1 owner of each asset (e.g., fish, fields, ...)?
- And how is it owned?

Plan for Today

1. Discuss basic structure of property law – you need to know some of this to understand if economics is useful.
2. Discuss basic economic models of property rights. – informally mostly.
3. Link economics to property law.
4. Address a couple topics in detail – land demarcation, large scale resources (e.g., oil, fire).

**** Note US and Common Law focus. ****

What Should Property Law Do?

A plausible economic idea is that it should:

create a system of societal rules that govern land to maximize social wealth by creating incentives to maintain and invest in assets which leads to specialization and trade.

Property law should (or is expected to) do this by defining rights to create such incentives.

Miceli & Lueck (2008) in Shavell & Polinsky eds. *Handbook of Law and Economics*.

Is property law a path dependent interest group infested set of incoherent rules?

I will argue NO – that there is a strong economic structure.

BUT

- Historians and many property law professors would argue something like this.
- There are some areas (e.g., servitudes in real property) that do seem incoherent but can be seen to have an economic structure.
- And there appear to be some strong path dependencies in some areas (e.g., oil-gas, land demarcation).

Haslem v Lockwood Heaps of Horse Dung in 19th Century Connecticut

The Dung



The Conflict

HASLEM (DEFENDANT) HIRED 2 MEN TO GATHER MANURE FROM A PUBLIC DITCH AND PILE IT INTO "HEAPS"; LEFT THE HEAPS OVERNIGHT TO GET A CART FOR HAULING

LOCKWOOD (PLAINTIFF) LOADED THE HEAPS THE NEXT MORNING BEFORE HASLEM RETURNED

Haslem sued and lost initially, but won an appeal on the grounds that the manure was abandoned and that he established ownership by first possession and did not need to stand watch overnight.

Lockwood claimed that Haslem was wrong so he could take the heaps.

Lessons from *Haslem* -- Key Features of Property Law

First possession is the rule for establishing ownership.

- Homesteading, prior appropriation water law, mining law (for unclaimed land), pollution rights

“Possession” can be defined in many different ways (e.g., kill a fox or just be in hot pursuit?). stock vs. flow

- whale attached to ship vs. whale attached to harpoon with float

Law and custom typically do not require an owner to spend great effort at maintaining ownership (adverse possession takes years).

Ownership can be transferred by a) abandonment; b) sale; c) gift, d) conquest.

What are property rights?

- the (expected) ability of a person to use an asset (Barzel 1999, Shavell 2004)
- Create incentive to 1) use; 2) invest & maintain & specialize, & 3) transfer assets
- Enforced by courts, market, custom, etc

What is Law?

- Rules enforced by third parties, usually the 'state' (but see Mafia).
- Rules are also enforced by custom (informal enforcement by groups) markets (enforced by reputation).

What is economics of law?

Using economics to:

A) explain the rationale for law

B) explain the effects of law

Law creates incentives by altering costs & benefits of human actions.

What is property law?

Court enforced rules governing the establishment, use, and transfer of rights to land and those assets attached and adjacent (e.g., oil-gas, mineral, water, wildlife)

Economics of property law

Using economics to:

- A) explain the rationale for property doctrine (and relate extralegal rules)
- B) explain the effects of property doctrine

This area of L&E is less well developed than contract law, tort law etc - rare to have econ in property law classes

Why Property Rights?

1. Mitigate open access waste.
2. Provide incentives for investment & maintenance.
3. Facilitate exchange and specialization --- and foster wealth creation.

Property Rights, Transaction Costs & the Coase Theorem

- Resource uses have costs & conflicts
- Conflicts are reciprocal.
- Rights determine allocation IF transaction costs are positive.
- Law seems to optimally assign rights.

The Coase Theorems

1. $t_c = 0 \rightarrow$ law (rights) does not matter
 2. $t_c > 0 \rightarrow$ law (rights) does matter
- The single owner as an analytical benchmark: what would a single owner do?

Basic Property Rights Models

- Open access (anti-commons too)
- Private property
- Common property
- State property
- Mixed property & complex assets --- key to deep understanding

Open Access

- Overuse
- Underinvestment
- Anti-commons issues (not really a problem of 'too many' owners)

Common Property

- Exclusive (but often vague boundaries)
- Economies of enforcement
- Customary internal allocation – tribal rules of seniority, kinship
- Costs of transfer are high (e.g., problems with indigenous people's land)
- Generate some rent (e.g., bison tribes)

Private Property

- Efficient use
- Efficient investment & maintenance
- Cost of enforcement
- State/collective enforcement regime as a public good makes private property more efficient (e.g., land demarcation)

State Property

Wide variance in regimes

- soldiers rifle & police cars
- public land (1/3 in US) – hiking, oil, timber, wildlife
- Chairs in public schools

Bureaucratic administration

- Lower powered incentives.
- Interest group pressures.
- limited transferability is typical.

Complex Assets & Property Rights

- Assets have many attributes.
- Ownership can be varied across the attributes & is also complex.

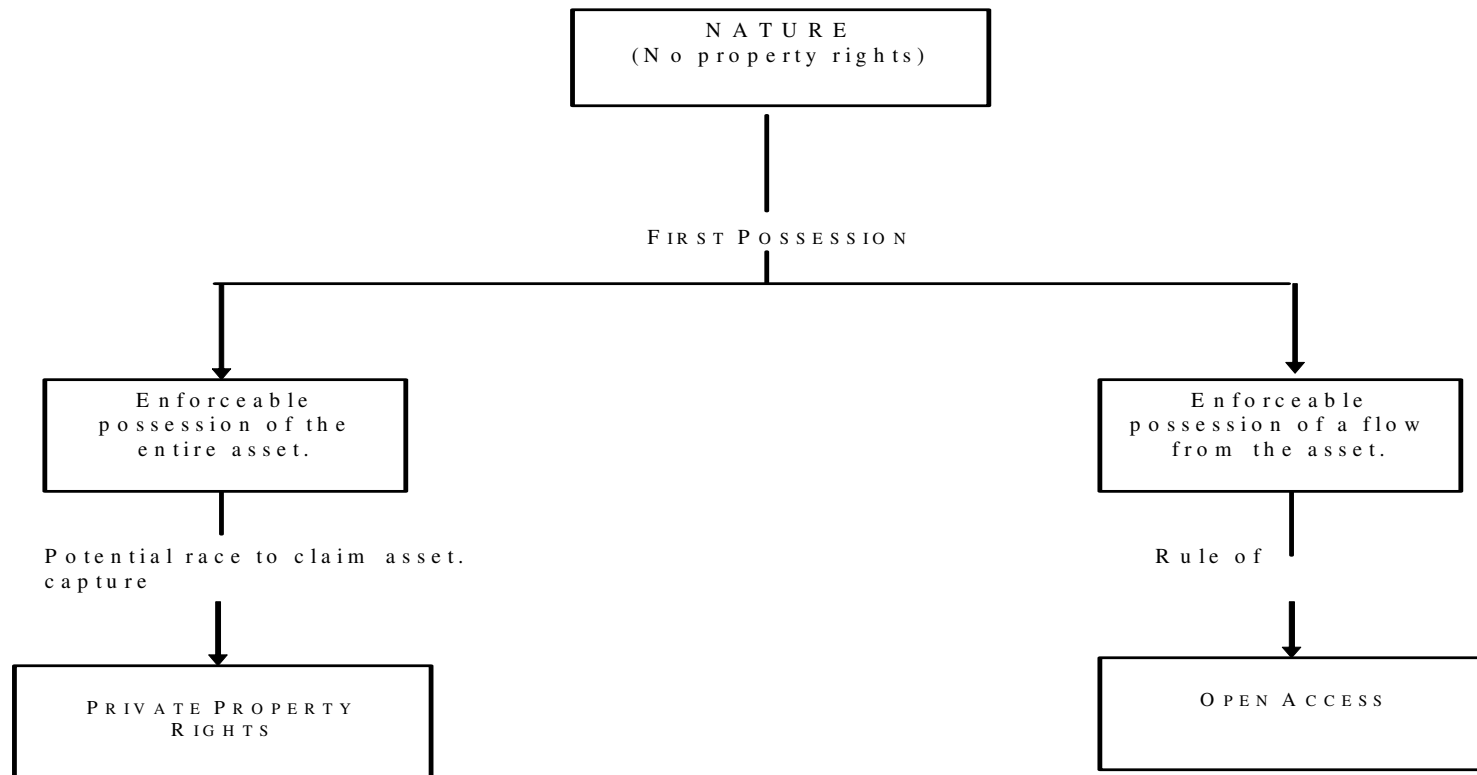
Land example

- Farming, water, air, access, utilities, minerals, ...
- Property law has to deal with this reality & it does. *Ad coelum* breaks down quickly ---

The Origin of Property Rights

- First possession - ownership to first claimant
- Conquest
- Accession (T. Merrill) – ownership to owner of an adjacent asset
- Bureaucratic assignment – rules, interest group pressure, etc.

The Path from First Possession



First Possession in Law

- Efficient claiming & dissipating races

Peirson v. Post

- 1st poss is the rule but how to define possession?

Haslem v. Lockwood

- 1st poss, abandonment & continued possession.

First Possession Rules

| <i>Asset</i> | <i>Possession Rule</i> | <i>Stock-Flow & Duration of Rights</i> |
|---------------------------------------|-----------------------------------|--|
| Chattels (abandoned, lost, unclaimed) | recover or show intent to recover | stock – permanent |
| Intellectual property | invent, write | stock -- varies (17 - 100 years) |
| Land | occupation & cultivation of land | stock – permanent |
| Minerals (hard rock) | locate mineral deposit | stock – permanent |
| Ocean fisheries | land fish | flow -- current catch |
| Petroleum | bring oil to surface | flow -- current production |
| Water- appropriation doctrine | develop a diversion plan | stock – permanent |
| Water-- riparian doctrine | pump or divert water | flow -- current use |
| Wild game | kill or capture animal | flow -- current kill |

Accession

Examples

- Cow and calf
- Attachments to land
- Internet domain names
- Cap & trade rights in environmental regulations

Vs First Possession

- Avoids the race
- Complementary assets (Merrill's 'prominent' asset)
- Makes sense only with complex assets

Evolution of Property Rights

How do property rights vary over time and space (and use)?

Do they tend to evolve toward private property out of open access?

Theory and evidence suggest – sort of.

Demsetz' (1967) Thesis

property rights emerge to internalize externalities (present in open access)

... an increase in the value of an asset will increase the gains from ownership and thus lead to the creation of property rights ...

Demsetz recounts the anthropological evidence of alterations in property rights among the Montagne Indians of Quebec during the 18th century.

Empirical Studies

1. Econometric studies are tough, so case studies dominate.

2. And

- The American West – land, water, horses, minerals, YES
- Women's Rights YES
- Oil and gas in United States SORT OF
- Bison SORT OF
- Broadcast Spectrum NOT REALLY

Theory of Rights Evolution

Theory depends a lot on how costs of enforcement change with asset or output value.

- Does increase value increase enforcement costs? Yes
- But by how much? Depends?
- Example → avocados and land use

Mechanisms of Rights Changes

1. Evolution of the common law

- ❑ Water law vs. Oil-gas law

2. Repeated games

3. Contracting

- ❑ Water law vs. Oil-gas law

4. Political economic & statutory intervention

What Does the Owner Get in Property Law? The *Ad Coelum* Doctrine

- *cujus est solum ejus est usque ad coelum*
- "to whomsoever the soil belongs, he also owns to the sky and to the depths"
- A good rule? Gold? Oil? Coal?
- *US v Causby* 326 US 256 (1946) — Causby wanted to compensation for taking from military airplanes flying overhead at low levels. Court rules rights did not extend to airspace.

Structure of law

- The simplest is *ad coelum*
- Then start to limit top to bottom
- Demarcation is the start
- Nuisance & trespass – dealing with outsiders
- Servitudes – dealing with neighbors and users
- Large scale assets – water, wildlife, air, fire

A Digression on Property Regimes

Fee Simple

ad coelum or “the whole enchilada”

Separate estate

possessory, perpetual ‘fee’ of part of the entire fee (e.g., mineral estate, water?).

Profit a prendre

transferable non-possessory right to extract (e.g., wood, fish-game, minerals).

Servitudes

non-possessory right to use another’s property (or restrict that use).

Lease

time limited possessory right

License

revocable, non-transferable use right.

Mineral Law & Property Law

- In US begin as part of fee simple estate under *ad coelum* doctrine.
- Can be severed from the fee – estates, profits, leases, licenses.
- Mineral estates – perpetual & separate possessory right to use, exploit, and transfer. Usually this is the dominant estate.
- Mineral *profit a prendre* – perpetual nonpossessory right to extract.
- Mineral lease – right to enter, explore, and extract minerals during a period of time, usually right to extract ends when resource is exhausted
- Mineral license – rare?
- Federal and state govt sometimes retain mineral estates.
- Large scale leasing in coal and oil-gas – Appalachia and the west.
- We now have a mix of surface ownership and subsurface rights. This can be costly to reassemble.
- Mineral law defines rights and obligations of surface and subsurface rights holders (e.g., subsidence, access, roads, ...)

Law & Voluntary Transfers of Property

- Demarcation systems – rectangular vs. natural systems
- Title systems – recording & registration
- Inheritance rules

Property regimes & related law

- Separate estates, profits, servitudes, leases, licenses, ...

Law & Involuntary Transfers

- Adverse possession
- Mistaken improver
- Real estate partition
- Theft
- State takings & compensation

Law & Land Use Conflicts

- Trespass law
- Nuisance law
- Servitude law
- Zoning
- Public lands

Public Property & Public Use

- Optimal scale of ownership – WILDLIFE, OIL
- Public trust doctrine - WATER
- Conflagration doctrine – FIRE
- Eminent domain & regulatory takings
- Public use of private property
- Compensation for taking

Public Trust & Water

English common law rule gave the Crown title to navigable waters and the shore below the high water mark.

- *Illinois Central RR v. Illinois* 146 US 387 (1892): state owns navigable water and submerged lands.

Modern extensions into beaches, in-stream flows, etc.

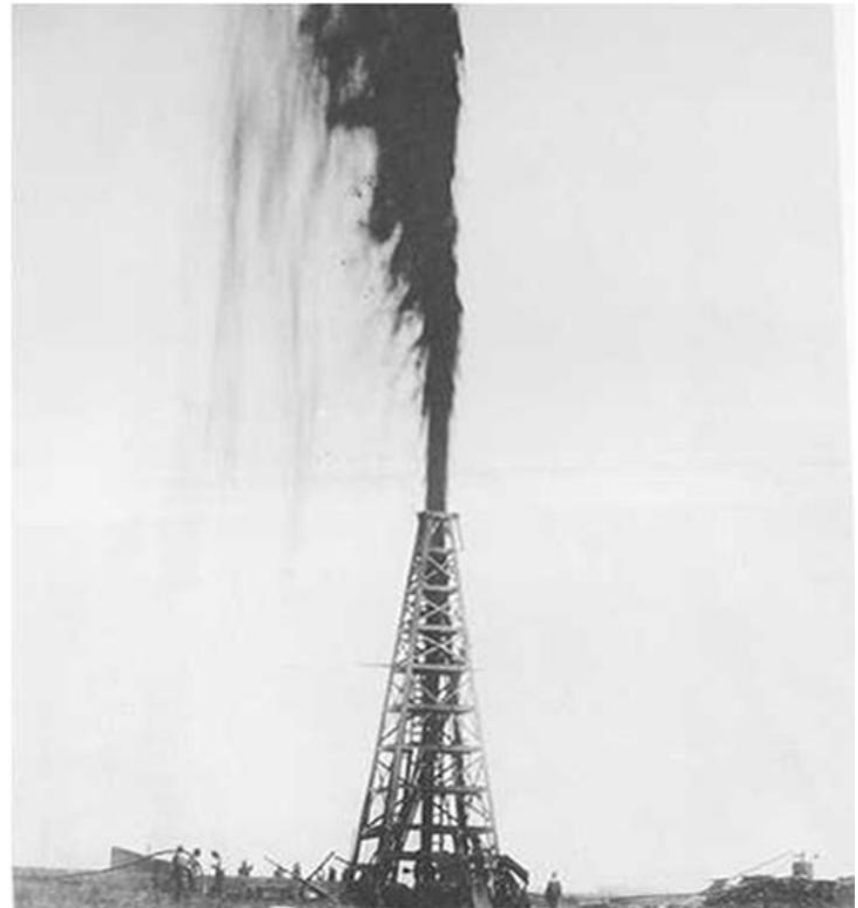
- *Audubon Society v. Alpine County*, 658 P. 2d 709 (Cal 1983) took water rights from LA for Mono Lake.
- Public trust is a common property or perhaps open access regime.
- Bureaucracies become the trust manager.

Why Do We Have Public Lands?

- Market failure? Specifically what is the problem?
- Public goods?
- Interest group pressure to create land agencies and retain federal lands?
- Would a private system be better –w/ private contracting & common law solutions?

Ad Coelum Doctrine & Oil?

- *cujus est solum ejus est usque ad coelum*
- "to whomsoever the soil belongs, he also owns to the sky and to the depths"
- A good rule for oil?



Barnard v. Monongahela: The Rule of Capture

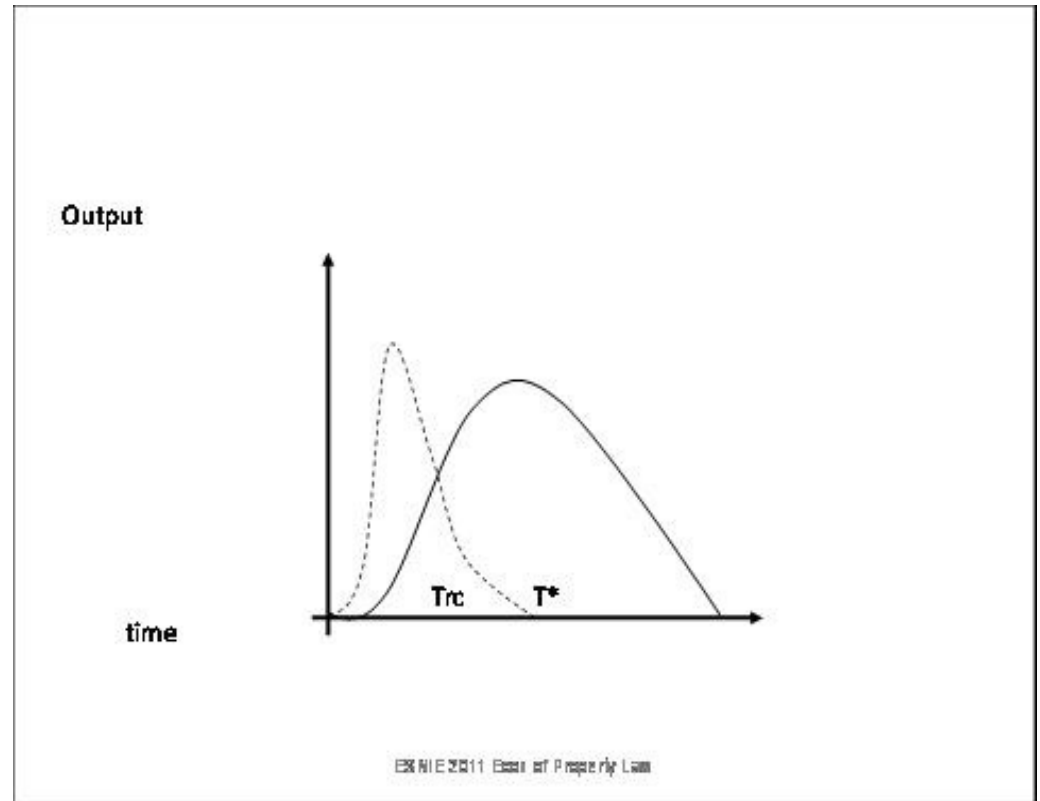
(PA. 1907) Plaintiff claim invasion of property rights and want some of the rental value of the well from the gas production.

“.... Every landowner or his lessee may locate his wells wherever he pleases, regardless of the interests of others ... What then can the neighbor do? Nothing: only go and do likewise. He must protect his own oil and gas. He knows it is wild and will run away if it finds an opening and it is his business to keep it at home. This may not be the best rule; but neither the Legislature nor our highest court has given us any better?”

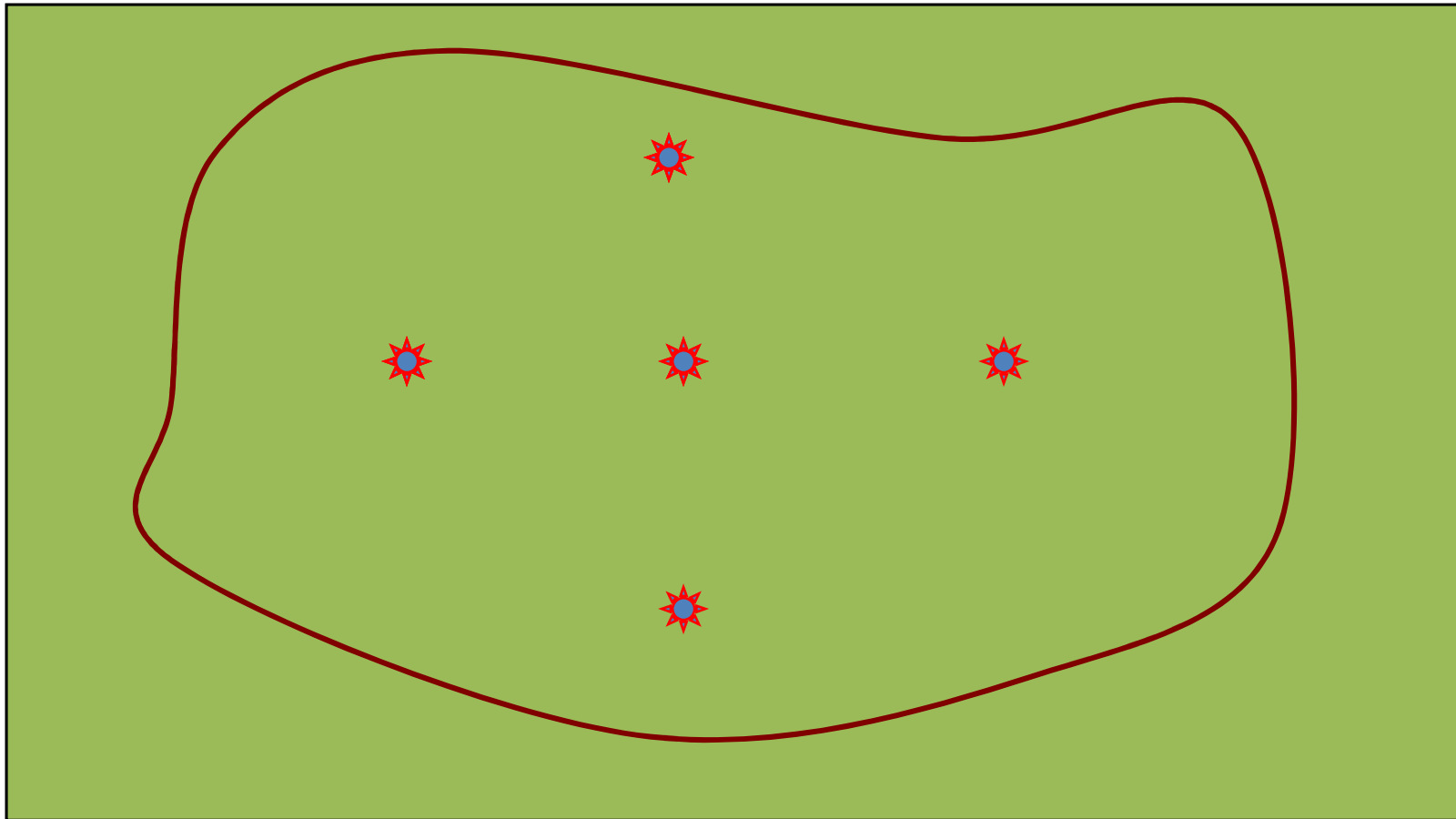
“Injunction is certainly not the remedy. If so just how far must the landowner be from the line of his neighbor to avoid the blow of ‘this strong arm of the law?’”

Drilling: Optimal v. Rule of Capture

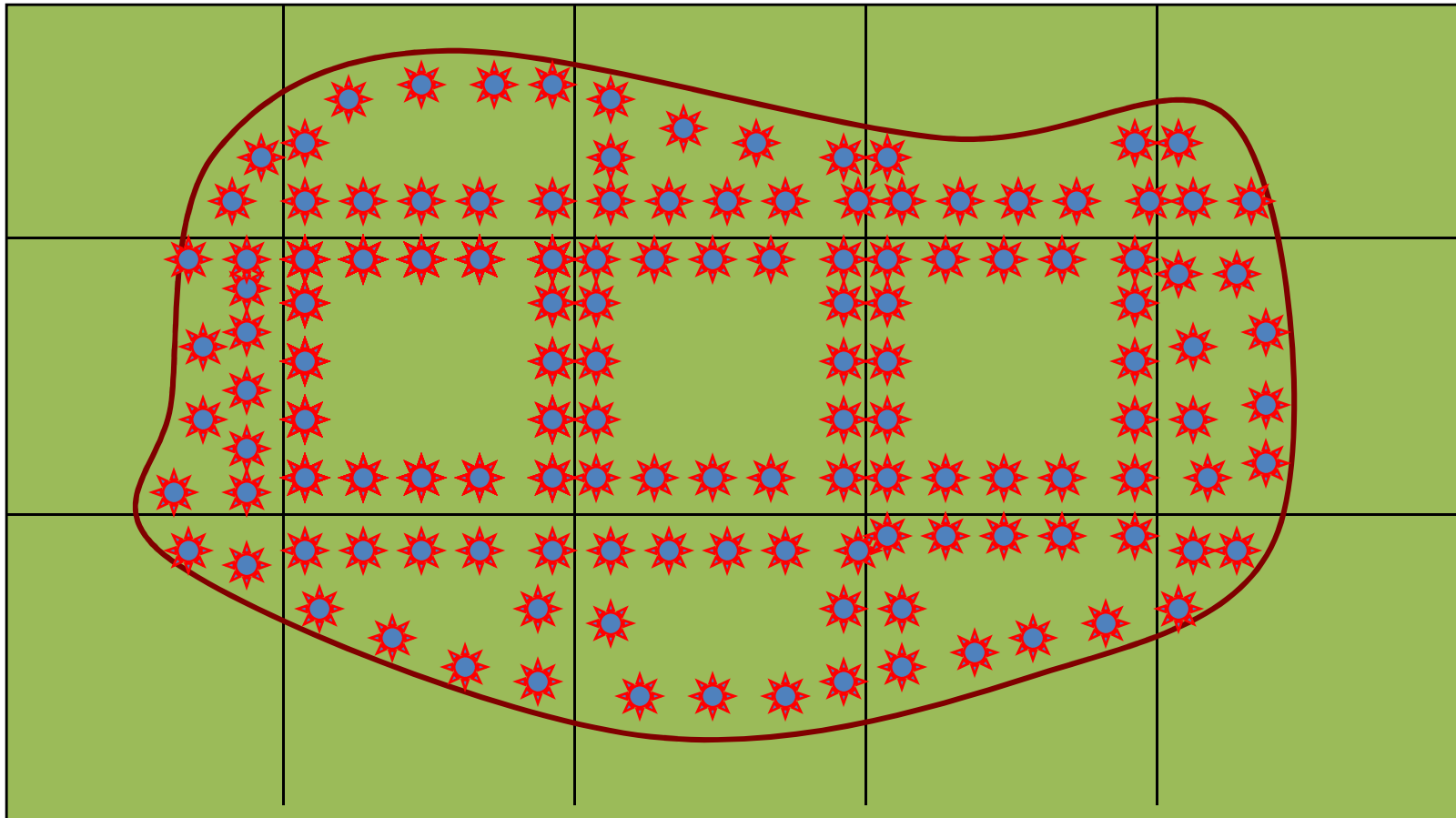
- Optimal – pick optimal location and number of well.
- Rule of capture – drill wells along the property lines.
- Shift the time path of production forward



Large Land Owner Case



Fenceline Drilling under Rule of Capture



Rule of Capture in Practice



HUNTINGTON BEACH, CALIF.

HITCHCOCK PHOTO—69

Summary: Economic History of Oil-Gas Law

1. *Ad coelum* led to rule of capture.
2. Rule of capture led to tremendous waste.
3. Common law did not adjust.
4. Private parties contracted & states legislated.
5. Unitization is now the rule creating property is hydrocarbon stocks.

There Will Be Blood

Daniel Plainview –

“It’s called drainage. I own everything around it ... so I get everything underneath it.”



Is Marine Fisheries Law Mistaken?

Gulf Coast Shrimpers v. US

Facts

- Gulf Coast Shrimpers – a fisherman's coop in Biloxi, Mississippi, limited access, restricted where shrimp could be sold (1950-53). Oyster fisherman too. Association had many subgroups – not clear what the geographic reach was.
- US – prosecuted association for restraint of trade and price fixing

Decision

- Court upheld original decision

Economics

- Monopoly? Which market?
- Property rights formation?
- How can you tell?
- Is fisherman's coop a union? A firm? Unions are exempt from antitrust law.

Adler (2004) on Fisheries Law

- Notes that US antitrust law has enjoined fishing groups exclusive practices since the 1930s.
- These groups often limited open access exploitation and thus were likely serving a conservation purpose.
- *Per se* rule against exclusion is too rigid for natural resource cases or property rights cases.
- Adler does not address the 'relevant market' issue for market power problems.
- Adler does not discuss how the antitrust legacy might have impacted the path of fisheries regulation.

Landscape Preservation Regimes

Europe

- Private land w/ restriction on land use.

Africa

- Government owned and managed parks (e.g., SA, Kenya).

US & Canada

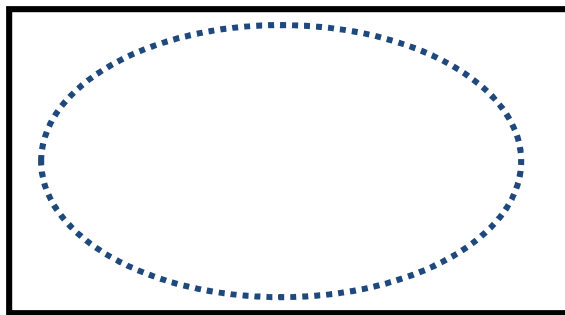
- Large scale public land ownership.

The Basic Problem - Contracting Costs

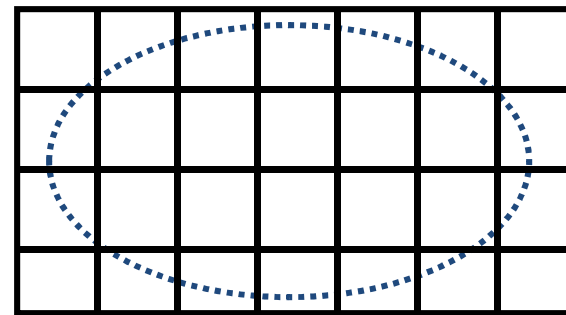
Resource ----- Private property

———— Public property ————

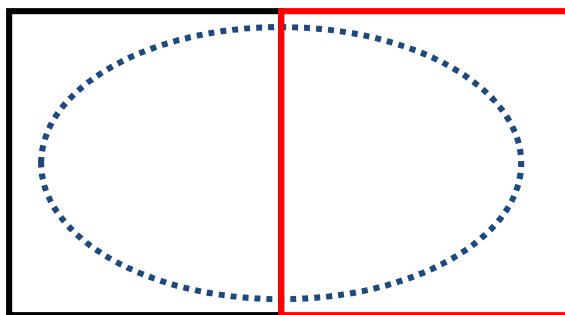
(A)



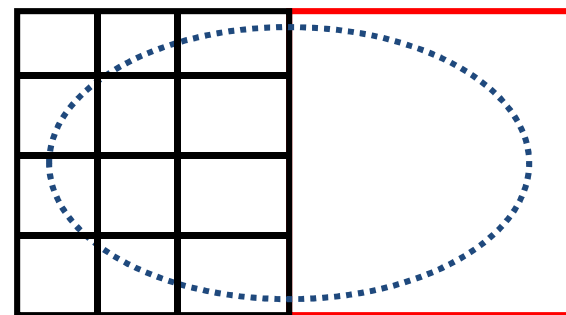
(B)



(C)



(D)



Rangifer tarandus

Wild Caribou – weak property rights, different law



Domestic reindeer – strong property rights, strong law



Inalienability of Property Rights

- With $tc = 0$ transfers should not be restricted.
- With $tc > 0$ restrictions can be efficient (e.g., water law in US, servitudes).
- But some restrictions reflect interest group pressures.

The law of servitudes on land

- Servitudes allow specialization in ownership.
- Servitude law seems to be an incomprehensible morass. (Easements from property law, Servitudes from contract law, Equitable servitudes).
- Asymmetric information theory illuminates the doctrine.

Economics of Servitudes

| Doctrinal Area | Doctrinal Rule | Economic Rationale and Supportive Evidence |
|--|--|--|
| Negative easements | “List of Four” – English law allowed negative easements only for air, building support, light, and riparian water. No restrictive list in United States. | The United States system of title recording reduced the costs of monitoring easements compared to England which did not have recording or registration 1925. |
| Restrictions on easements | More restrictions on negative than affirmative easements. | Affirmative easement are easier to observe and verify upfront |
| Partitioning and variation of easements | Partitioning of easements – courts allow usually Variation of easements – courts less likely to allow unless it has become obsolete | Subdivision of a parcel does not alter the relationship between servient and dominant estates. |
| Prescriptive easements | American rejection of negative easements by prescription. | U.S. courts allowed more negative easements than England but limited prescription to avoid judicial supervision costs. |
| Formation of easements | Must be capable of grant; non-interference with use of servient land | Granting implies a well defined right and non-interference with servient land use. |
| Formation of real covenants & equitable servitudes | Privity (real covenants) and touch & concern requirements (real covenants and equitable servitudes). | Both requirements limit servitudes to cases with stable relationships. Privity requirement are lower in US where land title is clearer. |
| | | |

Ephemeral Assets: Fire and Ice

ICE – in US and Europe before refrigeration there was a big market in ice from rivers and lakes.

FIRE – worldwide fire (wildfire) is a powerful force that imposes costs and provides benefits. [we will take a closer look at fire]

Both are temporal & ephemoral assets. How are they owned? How does the law respond?

Ice – rights & law emerged and then vanished

Fire – rights are vague and divided to this day but law is involved.

Property Rights in Wildfire?



Merrill (2011) on Law of Fire

- Fire can spread across properties and be catastrophic in urban areas.
- Suppression requires rapid and coordinated action by people across the area where fire is and will be.

How does the law respond?

1. Doctrine of overruling necessity – exception to trespass
2. Expanded police power – even allowing prevention measures
3. Conflagration Doctrine – no compensation for damages during suppression

Law ‘largely nullified conventional property rights’ during a fire. ... ‘property rights go up in smoke ...’

WILDFIRE (fire in wild land) – related law and institutions.

Optimal Wildfire Institutions

Want to Maximize Expected Net Benefits

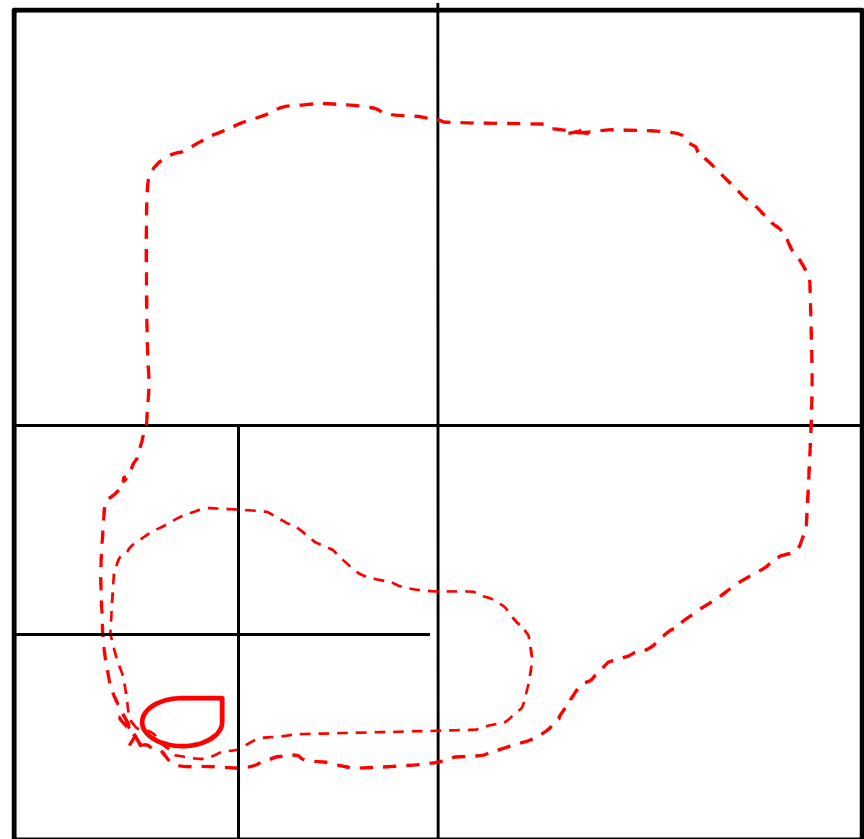
- Incentives to avoid losses (life and property damage)
- Incentives to capture benefits (healthy forest,)

Ownership of the Fire?

The Fireshed

- Problem is like oil reservoirs, wildlife
- *Fireshed* --- the area where the fire may/will travel.

Fire depends on man's action
and nature (uncertainty).



Wildfire Management in Western US

Many landowners: USFS, BLM, USPS, states, private – large and small.

NIFC – centralized coordinating agency.

Specialized government suppression crews (USFS dominates).

- Complex organization seems necessary but create many seemingly perverse incentives.
- Incentives: excess damage during fire suppression (e.g., backfires); overuse of suppression resources, overdevelopment in fire prone areas

Two Italian Cities

Roma (42°N, 12°E)



Torino (45°N, 7°E)



Land Demarcation systems

1. Ancient human institution: foundation for land and markets.
2. Just two types generally: MB (e.g., Rome) & RS (e.g., Torino)
3. We have a natural experiment in the US to study the consequences.
4. We find the RS is generally better.

Metes & Bounds

- The basic world-wide unsystematic-local method.

Rectangular Survey

- Dividing the world into squares based on latitude and longitude.
- Roman Empire
- US since 1785 Land Ordinance

Libecap & Lueck (several papers) explore this ---

What We Find

- Land demarcation matters – an organized grid has higher land values (20-30%), fewer legal disputes, more land transactions
- Land demarcation has long term effects (centuries) – land value differences persist
- Implies that coordinated networks have economically significant value.

Mexico-US Border Near Yuma, AZ.



Barcelona



Within the USA



Virginia

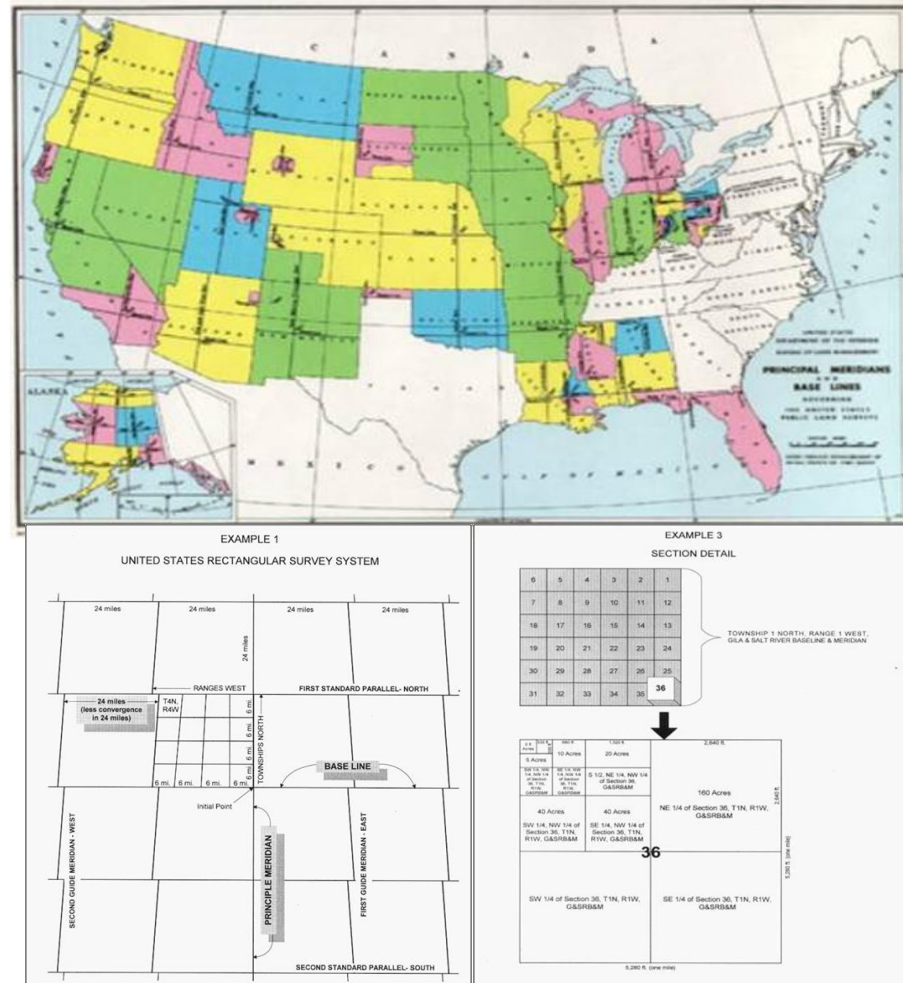


South Dakota

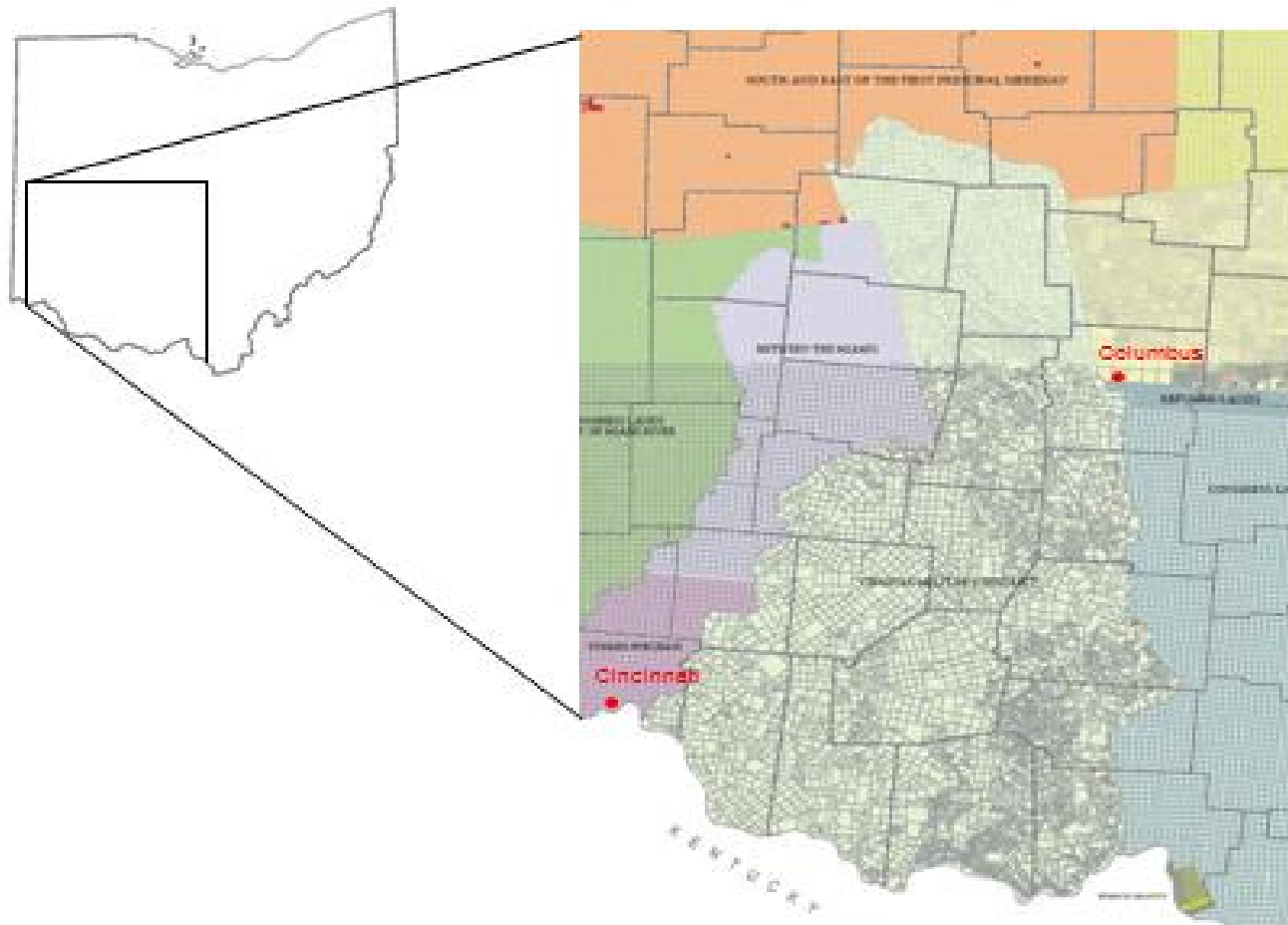
The Rectangular System in the United States

1785 Land Ordinance

- 37 Principle meridians (north-south lines); 37 baselines (east-west lines)
- Township = 6 x 6 miles = 23,040 acres, divided into 36 sections
- Section = 1 x 1 mile, 640 acres, 80x80 chains
- Correction lines every 24 miles
- Public Land Survey System (PLSS) is administered by BLM
- Boustrophedonic numbering ('ox-turning')



Natural Experiment in Demarcation: Virginia Military District (VMD) in OHIO



Summary of OHIO Findings

1. Land governed by RS has higher value than under MB. (15-30%)
2. MB has a higher rate of legal disputes (18x): more over-claiming, more sequential impacts, more strategic claiming, and more title disputes under MB.
5. Land governed by RS has more market transactions per area than under MB. (70-105%)
6. The estimated net gains from RS in VMD areas of Ohio = +\$7 million (\$1860)
7. The RS has long term impacts on land values (RS effect 25-60%) and on economic development from 1850-2000.

Land Value Estimates - Ohio Experiment

$$\ln V_i = \alpha + \beta t_i + \vartheta RS_i + \gamma(RS_i t_i) + \mathbf{C}_i' \boldsymbol{\Phi} + f(X_i, Y_i) + \varepsilon_i,$$

α is the value effect under MB in flat terrain;

β reflects value changes as terrain becomes more rugged with MB;

ϑ is (+) value effect of RS in flat terrain;

γ represents the (-) effect of RS in rugged areas;

\mathbf{C}_i is a row vector of exogenous determinants of farmland values (e.g., soil quality, distance to market);

$f(X_i, Y_i)$ is a function of longitude (X) and latitude (Y) coordinates;

Total RS effect = $\vartheta + (\gamma * t_i)$ expected to be decreasing in ruggedness.

Data: both full and border township samples

Estimates of Township Land Value:

dep variable = ln value/acre (\$1860)

| Independent Variables | (1) | (2) | (3) | (4) | (1) | (2) | (3) | (4) |
|----------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------------|--------------------------|-------------------------|------------------------|
| | Full Sample | | | | Border Sample | | | |
| RS | 0.18*** [0.06] | 0.39*** [0.06] | 0.31*** [0.07] | 0.34*** [0.07] | 0.25* [0.15] | 0.31*** [0.12] | 0.25** [0.12] | 0.20* [0.13] |
| RUGGEDNESS | -1.62* [1.12] | -5.47*** [1.24] | -4.11*** [1.27] | -0.78 [1.43] | 3.20 [3.40] | -6.02** [2.68] | -6.58*** [2.36] | -2.58 [3.98] |
| RS*RUGGEDNESS | -3.87*** [1.42] | -3.22** [1.48] | -2.51** [1.39] | -2.64** [1.51] | -5.77 [5.96] | -6.53* [4.00] | -6.72** [2.84] | -6.36** [3.10] |
| Latitude and Longitude | No | Yes | Yes | Yes | No | Yes | Yes | Yes |
| Quadratic Spatial Function | No | No | No | Yes | No | No | No | Yes |
| Additional Controls | No | No | Yes | Yes | No | No | Yes | Yes |
| Observations | 774 | 774 | 774 | 774 | 135 | 135 | 135 | 135 |
| Adjusted R-squared | 0.213 | 0.393 | 0.431 | 0.549 | 0.082 | 0.440 | 0.524 | 0.524 |
| F Statistic | 99.43 | 96.78 | 72.81 | 65.71 | 6.062 | 9.480 | 11.54 | e(F) |

Long Term Effects of Demarcation

1. OHIO Case

- VMD today – this is a relatively poor area of Ohio
- VMD versus RS in Ohio over time
- RS effects on land values persist until the current period

2. Roman Empire put a 2000 year-old imprint on the land.

Ohio Population: 1850-2000

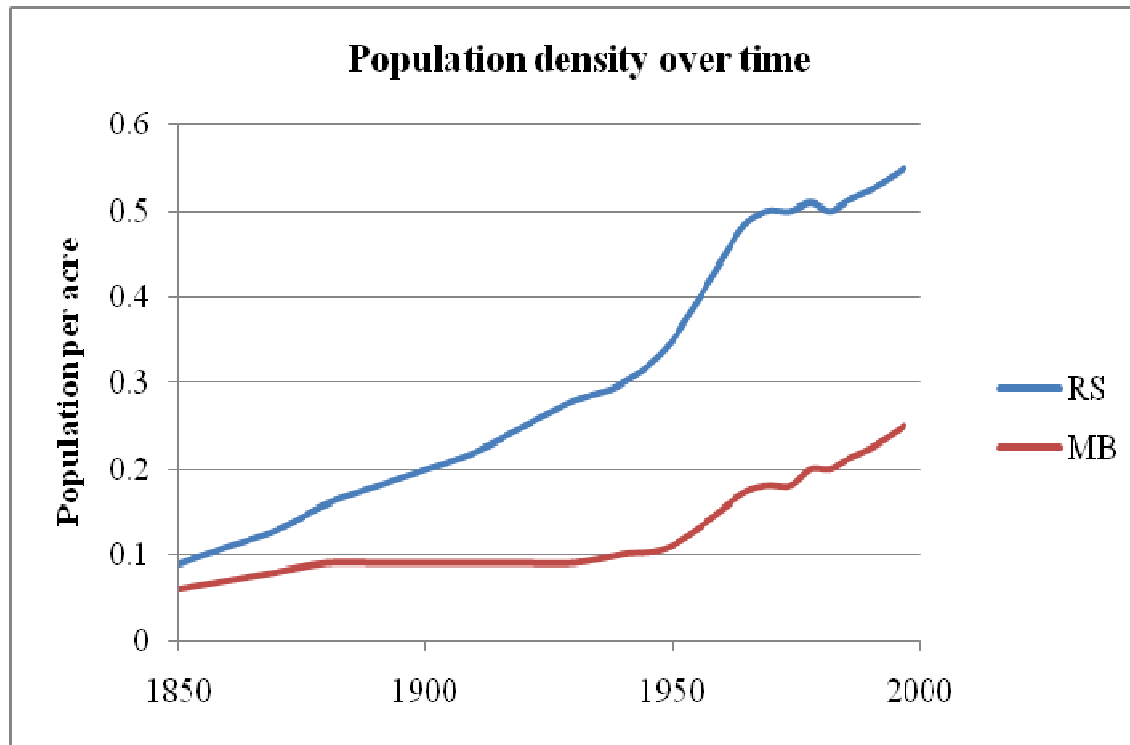


FIGURE 4: POPULATION DENSITY OVER TIME IN RS AND MB REGIONS IN OUR SAMPLE

Notes: Averages are taken from county-level population census data and weighted by total county acreage. Averages from counties that straddle the VMD border are additionally weighted by the fraction of county area in each demarcation region.

Estimating Long-Term RS Effects

$$L_{it} = \alpha_t + \beta_t t_i + \vartheta_t RS_i + \gamma_t(t_i RS_i) + \mathbf{C}_i' \boldsymbol{\Phi} \boldsymbol{\tau} + f_t(X_i, Y_i) + \varepsilon_{it},$$

L_{it} is (ln)land value, (ln)population density, share of county land in farms;

α_t is the value in flat terrain under MB;

β_t is the terrain effect under MB;

ϑ_t is the value in flat terrain under RS;

γ_t is terrain effect under RS;

Data: county-level panel from 1850-1997.

Table: estimates of ϑ_t the RS effect at various times.

Long Term RS Effects

| Year | (ln) Farmland value/acre | (ln) Population density | Fraction of county in farmland |
|----------------|--------------------------|-------------------------|--------------------------------|
| 1850 | 0.39* | 0.81** | 0.11 |
| 1870 | 0.48** | 0.95*** | 0.04 |
| 1890 | 0.45** | 1.10*** | -0.03 |
| 1910 | 0.29* | 1.37*** | -0.05** |
| 1930 | 0.59** | 1.62*** | -0.09* |
| 1940 | 0.53** | 1.60*** | -0.14*** |
| 1954 | 0.46** | 1.78*** | -0.14** |
| 1969 | 0.46** | 1.88*** | -0.27*** |
| 1982 | 0.24** | 1.83*** | -0.26*** |
| 1997 | 0.40** | 1.80*** | -0.28*** |
| R ² | 0.90 | 0.52 | 0.82 |

Notes: Obs. 936. The outcome variable is indicated at the top of each column. The table reports the estimated coefficient on the RS variable from a regression the outcome variable on the RS share, ruggedness, percent prime farmland, and spatial controls. The spatial controls are latitude and longitude of the county centroid and an interaction between the two.

Why Are There Long Term Effects?

1. RS reduced the costs of defending borders, more secure property rights; promoted land exchange; reduced conflict; alignment for infrastructure.
2. Over time there are system specific private and public benefits in land (buildings, fields, road, fences)
3. Converting to RS would require contracting over large heterogeneous parcels and accepting losses for this invested capital.
4. Long-term—agglomeration benefits of the RS advantage attracts more people.

Coordinating Property Institutions

- The systematic rectangular survey is an example of an institution that provides coordination, information, and incentives.
- Not just property rights, but the nature of the property right matters.
- Other coordinating institutions: language, law, traffic rules, title recording, uniform contracts, uniform laws, unitization in oil fields, ITQs in fisheries.

Implications for Law & Policy

- When is centralization better?
- What are the tradeoffs?
- Can you have centralization and decentralization at the same time?
- Standards and networks
- Italy: they chose the language of Tuscany upon unification.

Thoughts on Path Dependence

Q: Why doesn't RS takeover the world?

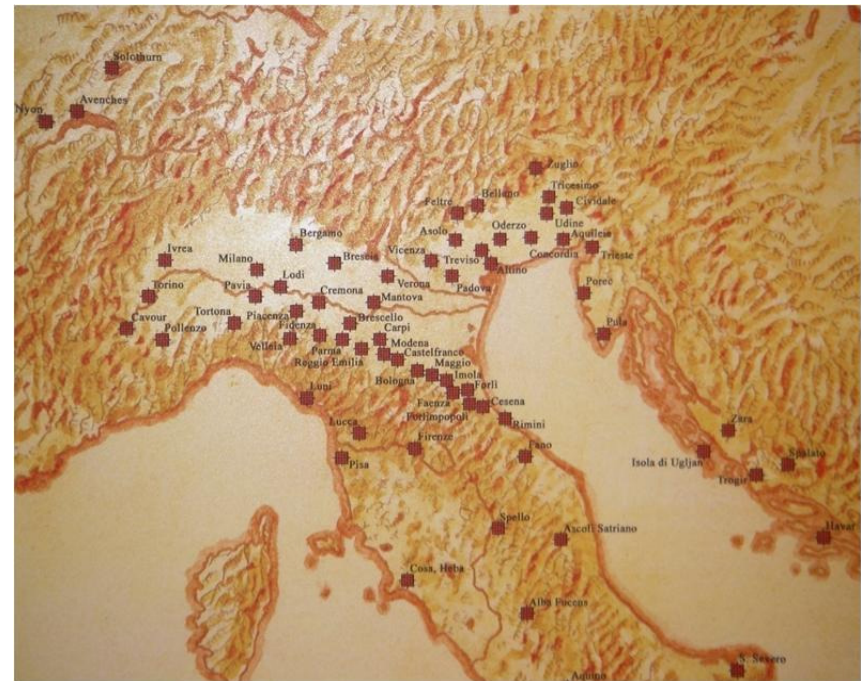
- Investments are hard to move: houses & buildings, fences, ditches & road.
- The network gains require a large area to consolidate (like oil reservoirs) and then you need to destroy the above investments.

Centuriation in Ancient Rome

Europe & N. Africa



Province of Italia



Some Thoughts on the Great Roman Network

- Land demarcation was a key component of Roman expansion.
- Legions, then agrimensores (surveyors) then colonists, and markets and trade.
- Agricultural trade allowed the empire to become wealthy.
- Network: language, law, money, & land.
- Versus the medieval land system.

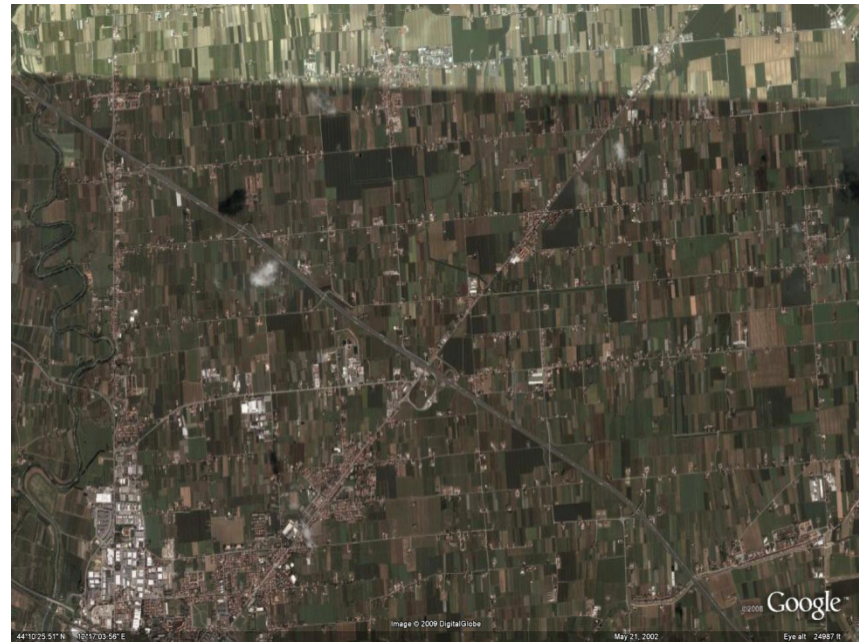
Roman Demarcation Still Present Today

<http://www.museodellacenturiazione.it/>

Carthage, Tunisia (36°N, 10°E)



Cesena, Italy (44°N, 12°E)



Summary

There is a basic economic structure to property law.

Empirical studies are difficult in law (small samples, endogeneity) – natural experiments are ideal but difficult.

There do seem to be path dependencies and the relationship with statute law is likely important (for common law).

Property Law's Role

- 1) Recognizes open access dissipation and costs of establishing rights
- 2) First possession is tailored to minimize waste
- 3) Create private rights to create incentive to use, investment-maintain & transfer.
- 4) Specialized estates, profits, leases, licenses & servitudes allow specialization of ownership
- 5) Trespass & nuisance doctrines address conflicts that arise because landowners have neighbors.
- 6) Public trust and public ownership address large scale assets/uses & public goods.
- 7) Demarcation systems create a platform for land markets and property rights to land.

Complex assets are the key insight – all else flows from this really.

An Economic Structure to Property Law

“... property law can be best understood as a system of societal rules designed to maximize social wealth ... by creating incentives ... to maintain and invest in assets which leads to specialization and trade.”

Miceli & Lueck (2008) in Shavell & Polinsky eds. *Handbook of Law and Economics*.

Economics of Property Law

Dean Lueck

May 18, 2011

ESNIE - Corsica

Economics & Law

For the rational study of the law the black-letter man may be the man of the present but the man of the future is the man of statistics and the master of economics ... We learn that for everything we have to give up something else, and we are taught to set the advantage we gain against the other advantages we lose, and to know what we are doing when we elect.

O.W. Holmes, The Path of the Law, 10 Har.L.R 457, 69,74 (1897)

Blackstone (1765)

“The earth, therefore, and all things therein, are the general property of all mankind, exclusive of other beings, from the immediate gift of the Creator. And, while the earth continued bare of inhabitants, it is reasonable to suppose that all was in common among them, and that every one took from the public stock to his own use such things as his immediate necessities required....

For, by the law of nature and reason, he, who first began to use it, acquired therein a kind of transient property, that lasted so long as he was using it, and no longer; or, to speak with greater precision, the *right* of possession continued for the same time only that the act of possession lasted. Thus the ground was in common, and no part of it was the permanent property of any man in particular; yet whoever was in the occupation of any determined spot of it, for rest, for shade, or the like, acquired for the time a sort of ownership, from which it would have been unjust, and contrary to the law of nature, to have driven him by force; but the instant that he quitted the use or occupation of it, another might seize it, without injustice. ...

Blackstone II

But when mankind increased in number, craft, and ambition, it became necessary to entertain conceptions of permanent dominion; and to appropriate to individuals not the immediate *use* only, but the very *substance* of the thing to be used. Otherwise innumerable tumults must have arisen, and the good order of the world been continually broken and disturbed, while a variety of persons were striving who should get the first occupation of the same thing, or disputing which of them has actually gained it. As human life also grew more and more refined, abundance of conveniences were devised to render it more easy, commodious and agreeable; as, habitations for shelter and safety, and raiment for warmth and decency. But no man would be at the trouble to provide either, so long as he had only an usufructuary property in them, which was to cease the instant that he quitted his possession Hence a property was soon established in every man's house and homestall ... And there can be no doubt, but that the moveables of every kind became sooner appropriated than the permanent substantial soil ... principally because few of them could be fit for use, till improved and meliorated by the bodily labour of the occupant, which bodily labour, bestowed upon any subject which before lay in common to all men....

Blackstone III

And the art of agriculture, by a regular connexion and consequence, introduced and established the idea of a more permanent property in the soil, than had hitherto been received and adopted. It was clear that the earth would not produce her fruits in sufficient quantities, without the assistance of tillage: but who would be at the pains of tilling it, if another might watch an opportunity to seize upon and enjoy the product of his industry, art, and labor?”

Commentaries on the Laws of England. [Book II, Chapter 1, 1765]

Empirical Studies

1. Choice of rights – Demsetz evolution
2. Effect of rights – L&L, Lueck & Micheal, Acemoglu and legal origins stuff, fisheries.
3. Not that much on property law per se – registration vs. recording of real property. Legal rules – data are hard to collect and organize.

Corsica & Arizona

