

USDA Land Retirement Programs

Daniel Hellerstein

USDA's primary land retirement programs are the Conservation Reserve Program (CRP) and the Wetlands Reserve Program (WRP). Started in 1986, the CRP has retired over 34 million acres of environmentally sensitive cropland under 10-to 15-year contracts. The WRP, started in 1992, protects over 1.6 million acres of wetlands, primarily using permanent easements.

Introduction

In 2004, USDA's land retirement programs accounted for over half of all the Department's conservation expenditures (See Chapter 5.1 for an overview of conservation programs.). Under these programs, the Government offers rental payments and other incentives to farm owners and operators, who convert land from agricultural production to land covers deemed more environmentally beneficial. In 2004, USDA spent over \$1.6 billion on the Conservation Reserve Program (CRP) to retire over 34 million acres of cropland. In addition, the \$280 million spent on the Wetlands Reserve Program (WRP) increased protected wetland acreage to over 1.6 million acres. Although the Farm Security and Rural Investment Act of 2002 signaled a shift toward working lands programs, land retirement will continue to be important. In this chapter, we review the trends, status, and challenges facing both the CRP and the WRP.

The Conservation Reserve Program

The Conservation Reserve Program (CRP) was established by the Food Security Act of 1985 and began enrolling farmland in 1986. The program uses contracts with agricultural producers and landowners to retire highly erodible and environmentally sensitive cropland and pasture from production for 10-15 years. Enrolled land is planted to grasses, trees, and other cover, thereby reducing erosion and water pollution and providing other environmental benefits (as well as reducing the supply of agricultural commodities).

Enrollment in CRP increased rapidly once the program got underway (fig. 5.2.1), with nearly all eligible applicants accepted. Approximately 34 million acres were enrolled during the first 9 signups (between 1986 and 1989).¹ In these early years, CRP eligibility was limited to about 100 million acres of land with highly erodible soils, with per-acre payments based on a regional average of cropland rental rates (along with half the cost of establishing permanent cover).²

The CRP was not the first farmland retirement program operated by the Federal Government, nor was it the only land diversion program operating

Contents

Chapter 1: Land and Farm Resources

Chapter 2: Water and Wetland Resources

Chapter 3: Knowledge Resources and Productivity

Chapter 4: Agricultural Production Management

Chapter 5: Conservation and Environmental Policies

- 5.1 Conservation Policy Overview

- **5.2 Land Retirement Programs**

- 5.3 Compliance Provisions for Soil and Wetland Conservation

- 5.4 Working-Land Conservation Programs

- 5.5 Conservation on Private Grazing Lands

- 5.6 Farmland Protection Programs

- 5.7 Federal Laws Protecting Environmental Quality

Appendix: Data Sources

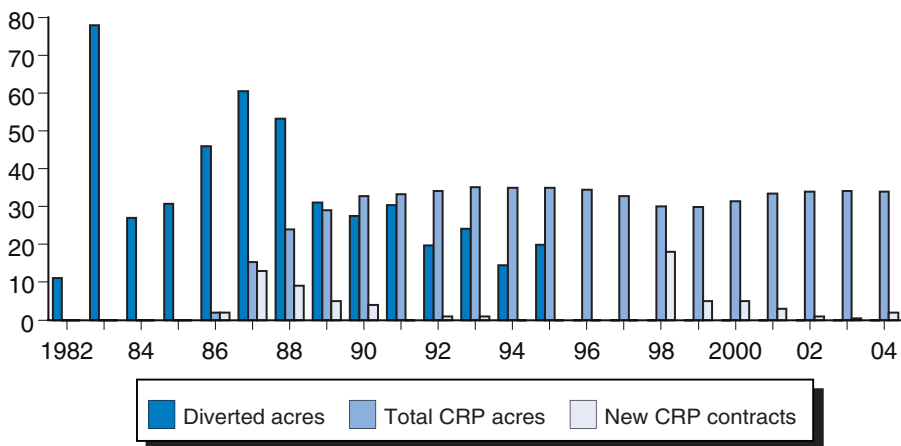
¹Although the original (1985) legislation envisioned the program retiring 40-45 million acres, enrollment authority was capped at 38 million acres in 1992 and reduced to 36.4 million acres in 1996. In 2002, CRP's enrollment authority was increased to 39.2 million acres.

²The amount of land enrolled in CRP does not necessarily reflect the amount of land removed from production. First, "slippage," the reallocation of lands outside the program (such as pastureland) to cropland uses, may occur. Wu (2000) argues that about 21 acres have been brought into crop production for every 100 retired through CRP. However, more recent studies using the same data have found no evidence of slippage in the CRP (Roberts and Bucholtz, 2004). Second, land enrolled in CRP might have left production even without the program. Lubowski et al. (2003) estimate this to be about 8 percent of CRP acres.

Figure 5.2.1

CRP enrollment and other diverted acreage

Acres (million)



Notes: Diverted acres includes land enrolled in the Soil Bank, and land used to fulfill Acreage Reduction Program requirements.

Source: Farm Service Agency CRP Summary Statistics and U.S. Land Use Summary.

at the time of its enactment. The Soil Bank Program, established in 1956, expired in the early 1970s. Furthermore, annual paid land diversion and Acreage Reduction Program (ARP) requirements continued through 1995. In fact, diverted acres outnumbered CRP enrollment until 1990 (fig. 5.2.1). However, these earlier land diversion programs focused on supply control and did not require environmental/habitat management. The primary goal of the CRP in the years immediately following its creation was to reduce soil erosion on highly erodible cropland (Osborn and Heimlich, 1994).³

The Food, Agriculture, Conservation, and Trade Act of 1990 expanded eligibility for CRP beyond highly erodible land. The 240 million acres of eligible land included several “Conservation Priority Areas” (the Chesapeake Bay, Long Island Sound, and Great Lakes watersheds), State water quality priority areas, and smaller plots of land adopting high-priority conservation practices (Barbarika, 2001).

USDA also made two significant changes to program enrollment criteria:

- To account for multiple environmental concerns, an environmental benefits index (EBI) was used to rank offers. The EBI weights a number of different concerns, including water quality, air quality, and soil erodibility (table 5.2.1).
- Maximum allowable rental rates were based on a soil-specific estimate of the rent earned on comparable local cropland. Use of soil-specific maximum rental rates enabled USDA to enroll environmentally sensitive, but highly productive, land into the program.

Following passage of the Federal Agriculture Improvement and Reform Act of 1996, wildlife habitat was added to the EBI. A continuous signup was initiated for acreage devoted to specific conservation practices, such as filter strips, riparian buffers, grassed waterways, field windbreaks, shelterbelts,

³It has been argued that, given the financial crisis facing the farm sector in the mid-1980s, curbing farm production and supporting income of CRP participants were equally important program goals (Dicks, 1987).

Table 5.2.1

Assignment of EBI points in the 26th CRP signup

Wildlife 100	Cover (introduced grass, native grass, trees) 50		Priority zones 30	Wildlife enhancement 20
Water quality 100	Within designated State water quality zone 30	Groundwater vulnerability 25		Surface-water vulnerability 45
Erosion 100	Erodibility index 100			
Enduring benefits 50	Enduring benefits (tree plantings, wetland restoration, existing trees, grass seeding) 50			
Air quality 45	Air quality benefits 35	Wind erosion soils 5	In air quality zones 5	
Costs 150	Per acre rent 125 $125 \times (185 - \text{bid_amount}) / 185$ (185 is CRP's maximum allowed bid)		No cost-share 10	Bid below maximum rate 15

living snow fences, salt-tolerant vegetation, shallow water areas for wildlife, and wellhead protection. In 1997, continuous signups were augmented by the Conservation Reserve Enhancement Program (CREP), a Federal-State partnership designed to encourage farm conservation practices that meet specific State and national conservation and environmental objectives.

With early contracts expiring, signups conducted in 1997 and 1998 enrolled over 22 million acres. Unlike the early signups, competition was keen, with all bids ranked using the EBI. Since the bid process meant that already enrolled lands were not automatically re-enrolled, the distribution of CRP enrollment shifted somewhat during the 1990s. Of the nearly 34 million acres enrolled in 2002, 17 percent represented net additions to county CRP acreage (over the county's 1990 enrollment). And of the nearly 33 million acres enrolled in 1990, 14 percent was dropped from the program by 2002.

Although a roughly equal number of counties gained and lost CRP acreage between 1990 and 2002, there was little redistribution of acreage at the regional level (Sullivan et al., 2004). The Northern Great Plains gained slightly, at the expense of the Heartland (probably due to the lower rental rates requested by Plains bidders) and the Southern Seaboard (where many CRP acres planted in trees were not offered for re-enrollment).

Overall, the CRP started as a program with a soil conservation agenda, in a time when the farm sector was weathering a severe economic downturn. As other stakeholders recognized the potential of this dedicated stream of conservation expenditures, CRP evolved beyond soil conservation, with greater weight given to wildlife habitat, air and water quality, and carbon sequestration.

The Wetlands Reserve Program

The Wetlands Reserve Program (WRP) was established by the Food, Agriculture, Conservation, and Trade Act of 1990. WRP goals are the restoration of high-risk agricultural land located in, or adjacent to, floodprone areas. The stated emphasis of WRP is to protect, restore, and enhance the functions and values of wetland ecosystems to attain:

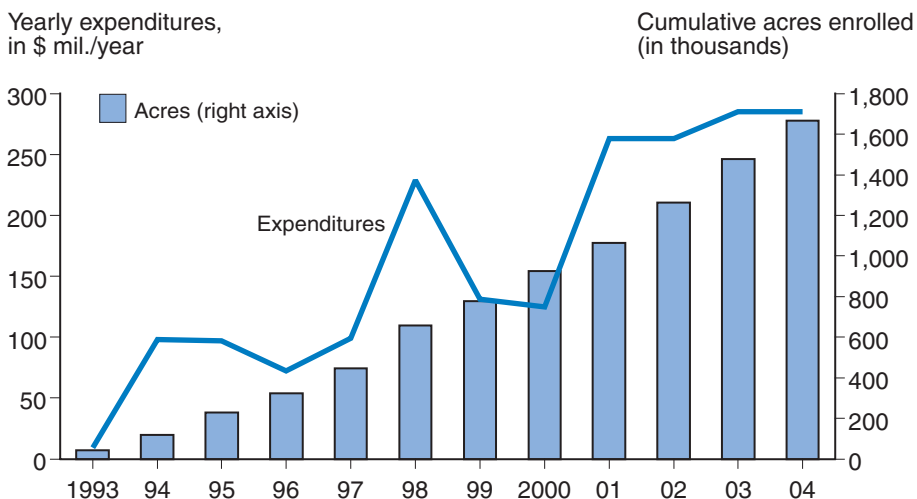
- Habitat for migratory birds and wetland-dependent wildlife, including threatened and endangered species,
- Protection and improvement of water quality,
- Attenuation of water flows due to flooding,
- Recharge of ground water,
- Protection and enhancement of open space and aesthetic quality,
- Protection of native flora and fauna contributing to the Nation's natural heritage, and
- Contribution to educational and scientific scholarship.

WRP enrollment began in 1992, with steady increases in subsequent years (fig. 5.2.2). When the initial enrollment cap of 1 million acres was met in 2001, the Farm Security and Rural Investment Act of 2002 reauthorized the WRP, increasing the cap to 2.275 million acres. The WRP uses three enrollment schemes: permanent easements, 30-year easements, and 10-year cost-share agreements.

The initial 2 years of enrollment consisted of pilot programs in a limited number of States. WRP has since sought the greatest wetland functions and values, along with optimum wildlife habitat, on every acre enrolled. In

Figure 5.2.2

WRP expenditures and cumulative enrollment



Source: NRCS/USDA.

pursuing these goals, WRP has undergone some changes. Most importantly, in the earlier years a “walk away” strategy was often used: parcels were allowed to return to their wetland condition with no other intervention. However, this strategy led to poor wetland function. So, a “full restoration” strategy was adopted in the late 1990s. Full restoration implies considerably more site preparation (for example, undoing land leveling). At least 70 percent of each project must be restored to the original natural condition (to the extent practicable). The remaining 30 percent can be restored to “other than natural” conditions.

Current Status of Land Retirement

As of January 2005, the CRP enrolled 34.8 million acres of land at a cost of \$1.68 billion per year (average cost of about \$45/acre). The bulk of this land was enrolled via “general” signup—about 31.7 million acres (table 5.2.2). The remaining acres are in “continuous” signup, which includes 117,000 acres of farmable wetlands (small non-floodplain wetlands). Most CRP land is in the Northern Great Plains, Prairie Gateway, and Heartland (fig. 5.2.3).

As of September 2004, the WRP enrolled 1.6 million acres of land, mostly in permanent easements. Expenditures in 2004 were about \$275 million spread over 189,000 acres (an average cost of \$1,400 per acre). Average contract size is 194 acres (table 5.2.3). Much of WRP land is in Missouri, Arkansas, Louisiana, Mississippi, Florida, and California (fig. 5.2.4).

Challenges

Over their 20-year-plus lifespans, both the CRP and WRP have provided an array of environmental benefits (table 5.2.4). While this suggests that both programs are successful, each faces challenges.

Table 5.2.2

CRP status of January 2005

Signup type	Contracts	Farms	Acres	Annual rental payments	
				(\$ million)	(\$/acre)
General ¹	394,767	262,076	31,753,754	1,384	43.59
Continuous					
Non-CREP ²	234,916	147,616	2,259,265	201	89.11
CREP ³	40,067	26,775	631,098	76	120.31
Subtotal	274,983	170,448 ^a	2,890,363	277	95.92
Farmable wetland ⁴	7,938	6,450	122,803	15	119.12
Total	677,688	397,970^a	34,766,920	1,676	48.21

¹General signup. Held on a more-or-less yearly basis, producers with eligible lands compete nationally for acceptance based on an environmental benefits index (EBI).

²Continuous (Non-CREP) signup. Producers with eligible lands may enroll certain high-priority conservation practices, such as filter strips and riparian buffers, at any time during the year without competition. In addition to annual soil rental payments and cost-share assistance, many practices are eligible for additional annual and one-time upfront financial incentives.

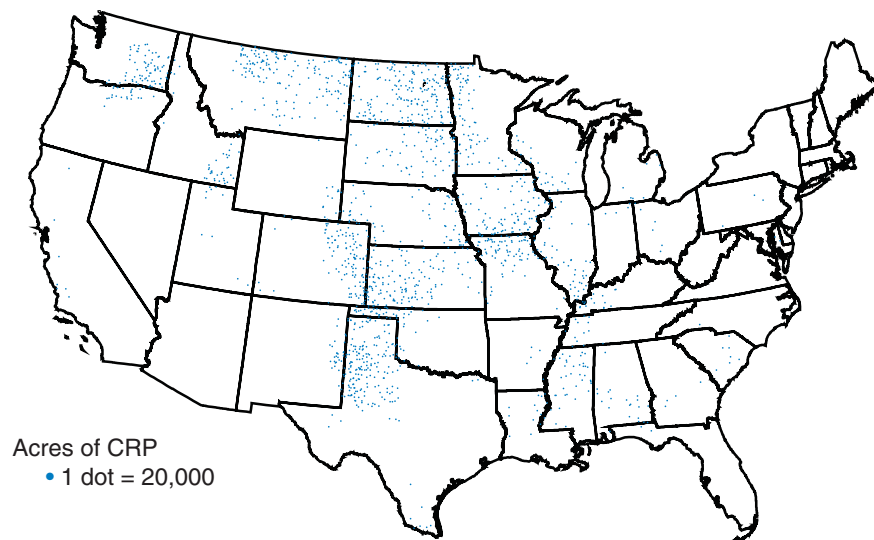
³Conservation Reserve Enhancement Program (CREP). There are currently 29 CREP Federal/State partnerships, which implement projects designed to address specific environmental objectives through targeted CRP enrollments. Signup is continuous.

⁴Farmable Wetlands Program (FWP). Producers enroll small non-floodplain wetlands under modified continuous signup provisions.

Source: FSA/USDA.

Figure 5.2.3

Distribution of CRP lands, 2004



Source: ERS, based on data from the Farm Service Agency, USDA.

Table 5.2.3

WRP status as of September 2004

Total enrolled acres	1.6 million
Average acres per contract	194
Size of contracts (percent of program acres):	
< 100 acres	61
100 to 500 acres	32
501 to 1,000 acres	5
> 1,000 acres ¹	2
Type of easement (percent of program acreage):	
Permanent	80
30 year	14
10 year ²	6

¹Many of the larger projects are the result of multiple landowners enrolling in the program, creating a single large area of land.

²The 10-year option is a cost-sharing agreement, not an easement.

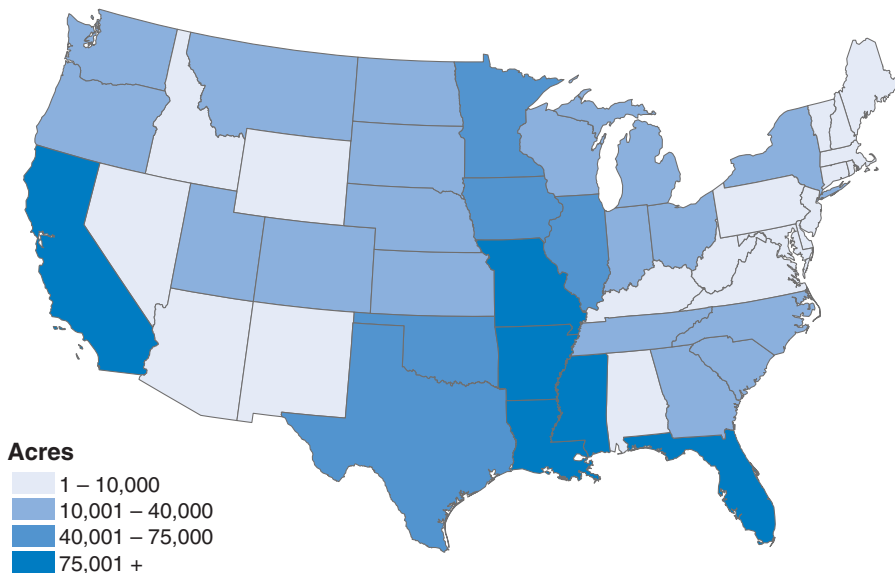
Note: Total includes 189,000 acres enrolled in 2004. These acres were in somewhat smaller contracts (188-acre average) with a somewhat larger share in permanent easement (82 percent).

Source: NRCS/USDA.

- **Selecting acres when managing for multiple objectives.** The CRP seeks to improve more than one environmental resource. Given that more acres are offered to each program than can be accepted, a mechanism that accounts for tradeoffs (between different environmental resources) is necessary. For example, the CRP uses the EBI to choose acres. The weights used in the EBI are based on the informed judgment of a number of scientists and land managers. However, modifications in the EBI—and in what lands are enrolled—could increase the social benefits of the program. For example, Feather et al. (1999) found that using the 15th signup (1997) EBI for all CRP acres, rather than the simple erodibility criteria used at CRP’s inception, increases

Figure 5.2.4

Distribution of WRP land, November 2003



Source: ERS, based on data from the Natural Resources Conservation Service, USDA.

Table 5.2.4

Examples of impacts of the CRP and WRP

Impact	Findings	Sources
CRP: Soil erosion	Soil erosion would increase by 220 million tons/year (60% wind, 40% water) if the CRP were terminated.	Hansen and Barbarika, 2004
CRP: Bird populations	From 1991 to 1995, in 6 Midwest States (IN, KS, MO, MI, NE, IA), bird abundance was 1.4 to 10.5 times greater in CRP land than within row-crop fields.	Best et al., 1997
CRP: Pheasant populations	Ringnecked pheasant numbers in Iowa are believed to have increased 30 percent during the first 5 years of CRP.	Riley, 1995
CRP: Duck populations	From 1992 to 1997, the CRP led to an additional 2.4 million ducks in the Prairie Pothole region.	Reynolds et al., 2001
CRP: Monetary measures of value	Improvements in wildlife viewing and pheasant hunting due to the CRP are estimated to be over \$700 million per year, plus over \$35 million per year from improved water-based recreation.	Feather et al., 1999
WRP: Wildlife and fish	A 7,500-acre project in Oklahoma provides habitat for 256 species, some of which are unusual for the State (such as wood storks and white ibis).	USDA/NRCS
WRP: Flooding	In Missouri, WRP has been used to breach levees on 16,000 acres, which has reduced flood heights and downstream flooding.	
WRP: Threatened and endangered	In Oregon, deep pools were included in a restoration to ensure the survival of the endangered Oregon chub.	

the value of several outdoor recreation activities by over \$350 million per year.

- **Management modifications.** As experience with the programs grows, opportunities for fine-tuning emerge. For example, land disturbances (such as grazing and controlled burns) every several years are often necessary to maintain good wildlife habitat (Rodgers and Hoffman, 1997). However, such actions are often costly to the landowner, and require monitoring by USDA. While these concerns have limited the use of such fine-tuning, significant improvements in program performance may be possible with relatively minor changes, such as changes in rental schemes to encourage more active management, or the use of third-party monitoring.
- **Eligibility expansion.** The success of voluntary programs such as the CRP and WRP depends on farm participation. For example, the CRP's refocus from erosion to a broader array of conservation priorities increased the pool of eligible acres from about 100 million to 250 million. While this brings in a variety of environmentally valuable lands, it also dilutes the soil conservation emphasis. When many environmental policies and programs exist, this dilution may be positive or negative.
- **National wetlands goals.** A current environmental goal is to increase wetland acres nationwide. However, the reduction in Clean Water Act jurisdiction of isolated wetlands underscores the need to use nonregulatory means. The WRP, with its proven record of protecting wetlands, and the CRP's Farmable Wetlands Initiative may acquire additional importance as a means of achieving this national goal.
- **Upcoming large re-enrollments.** In 2007 and 2008, over 60 percent (21 million acres) of current CRP contracts will expire. The administrative burden required to replace or re-enroll this acreage could be substantial. In order to reduce these costs while maintaining program flexibility, the USDA plans to use a judicious combination of early re-enrollments and 3- to 5-year extensions.

References

- Barbarika, Alex. 2001. *Conservation Reserve Program: Program Summary and Enrollment Statistics as of August 2001*. U.S. Department of Agriculture, Farm Service Agency, Nov. 2001.
- Best, L.B., H. Campa, III, K.E. Kemp, R.J. Robel, M.R. Ryan, J.A. Savidge, H.P. Weeks, Jr., and S.R. Winterstein. 1997. *Bird abundance and nesting in CRP fields and cropland in the Midwest: a regional approach*. Wildlife Society Bulletin 25(4).
- Dicks, Michael. 1987. "More Benefits with Fewer Acres Please!," *Journal of Soil & Water Conservation*, Vol. 42, No. 3, May.
- Feather, Peter, Daniel Hellerstein, and Leroy Hansen. 1999. *Economic Valuation of Environmental Benefits and the Targeting of Conservation*

- Programs: The Case of the CRP*, AER-778, U.S. Dept. Agr., Econ. Res. Serv., April.
- Hansen, LeRoy, and Alexander Barbarika. 2004. "The Environmental Benefits of Preserving the CRP." Presented at the Soil and Water Conservation Society annual meeting. Minneapolis, MN, July.
- Lubowski, Ruben, Andrew Plantinga, and Roberts Stavins. 2003. "Determinants of Land-Use Change in the United States, 1982-1997." Discussion Paper 03-47, Resources for the Future, Washington, DC.
- Osborn, Tim, and Ralph Heimlich. 1994. "Changes Ahead For Conservation Reserve Program," *Agricultural Outlook*, Vol. 209, July.
- Reynolds, R.E., T.L. Shaffer, R.W. Renner, W.E. Newton, and B.D. Batt. 2001. "Impact of the Conservation Reserve Program on duck recruitment in the U.S. prairie pothole region," *Journal of Wildlife Management* 65(4).
- Riley, T.Z. 1995. "Association of Conservation Reserve Program with ring-necked pheasant survey counts in Iowa," *Wildlife Society Bulletin* 23(3).
- Rodgers, Randy, and Richard Hoffman. 1997. *Prairie grouse population responses to CRP grasslands: An overview*. Draft discussion paper, Kansas Dept. of Wildlife and Parks, Hays, KS.
- Roberts, Michael J., and Shawn Bucholtz. 2005. "Slippage in the Conservation Reserve Program or Spurious Correlation? A Comment," *American Journal of Agricultural Economics*. 87.
- Sullivan, Patrick, Daniel Hellerstein, Leroy Hansen, Robert Johansson, Steven Koenig, Ruben Lubowski, William McBride, David McGranahan, Michael Roberts, Stephen Vogel, and Shawn Bucholtz. 2004. *The Conservation Reserve Program: Economic Implications for Rural America*, AER-834, U.S. Dept. Agr., Econ. Res. Serv.
- Wu, Junjie. 2000. "Slippage Effects of the Conservation Reserve Program," *American Journal of Agricultural Economics*. 82.