Guidelines and incentives for conservation design in local development regulations

SARAH E. REED\textsuperscript{1,2}, HEIDI E. KRETSER\textsuperscript{1}, JODI A. HILTY\textsuperscript{1} and DAVID M. THEOBALD\textsuperscript{2}

\textsuperscript{2}North America Program
Wildlife Conservation Society

\textsuperscript{2}Department of Fish, Wildlife & Conservation Biology
Colorado State University
This presentation is provided to attendees of the Pathways to Success conference for their information only. The data presented in the following slides are preliminary and are not for distribution.

Please contact me if you would like to use or refer to the data in this presentation:

Sarah Reed
Email: sreed@wcs.org
Phone: (970) 491-2895
Web: warnercnr.colostate.edu/~sereed
OUTLINE:

1) What is conservation development?

2) Guidelines and incentives for conservation design
   Review of local CD ordinances in Western counties, comparison to Northeastern towns

3) Conclusions and next steps
Conservation Development (CD) is an approach to the design, construction, and stewardship of a development that achieves functional protection for natural resources while also providing social and economic benefits to human communities.
CD IN NORTH AMERICA

• 25% of privately-conserved lands
  4 million ha (Milder & Clark 2011)

• 3% of new residential development
  40,000 housing units per year (McMahon & Pawlukiewicz 2002)

• 20% premium on sales price of homes
  (Hannum et al., in review)
CONSERVATION DESIGN GUIDELINES

guidebooks

LEED® for Neighborhood Development

Total Possible Points** | 110*
---|---
Smart Location & Linkage | 27
Neighborhood Pattern & Design | 44
Green Infrastructure & Buildings | 29

* Out of a possible 100 points + 10 bonus points
** Certified 40+ points, Silver 50+ points, Gold 60+ points, Platinum 80+ points

Innovation & Design Process | 6
Regional Priority Credit | 4
CD ORDINANCES:
Rate of adoption varies by state

CD ordinance?
- Yes
- Pending
- No
- Unknown
CD ORDINANCES:
Rate of adoption varies by state

NY: 18%
VT: 21%
NH: 46%
ME: 17%

CD ordinance?
- Yes
- No
- Not surveyed
CD ORDINANCES:

*Increasing rate of adoption over time*

- Western counties
- Northeastern towns

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Western Counties</th>
<th>Northeastern Towns</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951-1960</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1961-1970</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1971-1980</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>1981-1990</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>1991-2000</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>2001-2010</td>
<td>70</td>
<td>45</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Counties/Towns</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>0</td>
</tr>
<tr>
<td>1970</td>
<td>1</td>
</tr>
<tr>
<td>1980</td>
<td>10</td>
</tr>
<tr>
<td>1990</td>
<td>15</td>
</tr>
<tr>
<td>2000</td>
<td>20</td>
</tr>
<tr>
<td>2010</td>
<td>70</td>
</tr>
</tbody>
</table>
REVIEW OF CD ORDINANCES:

Key dimensions of conservation design

*Western US counties
REVIEW OF CD ORDINANCES:

*Key dimensions of conservation design*

- Density bonus provided as incentive for participation: **53%**

*Western US counties*
REVIEW OF CD ORDINANCES:

*Key dimensions of conservation design*

- Density bonus provided as incentive for participation: 53%

- Mean increase in development yield permitted as bonus: 71%

*Western US counties*
REVIEW OF CD ORDINANCES:

*Key dimensions of conservation design*

- Density bonus provided as incentive for participation: *53%*
- Mean increase in development yield permitted as bonus: *71%*
- Mean percent of site area required to be protected: *58%*

*Western US counties*
REVIEW OF CD ORDINANCES:

Key dimensions of conservation design

- Density bonus provided as incentive for participation: 53%
- Mean increase in development yield permitted as bonus: 71%
- Mean percent of site area required to be protected: 58%
- Site analysis for ecological features required: 13%

*Western US counties*
REVIEW OF CD ORDINANCES:

*Key dimensions of conservation design*

- Density bonus provided as incentive for participation: **53%**
- Mean increase in development yield permitted as bonus: **71%**
- Mean percent of site area required to be protected: **58%**
- Site analysis for ecological features required: **13%**
- Site analysis for ecological features required prior to developed area design: **5%**

*Western US counties*
REVIEW OF CD ORDINANCES:

*Key dimensions of conservation design*

- Density bonus provided as incentive for participation: **53%**
- Mean increase in development yield permitted as bonus: **71%**
- Mean percent of site area required to be protected: **58%**
- Site analysis for ecological features required: **13%**
- Site analysis for ecological features required prior to developed area design: **5%**
- Design of conservation area requires consultation with a biological expert or conservation plan: **10%**

*Western US counties*
## Regional Differences in CD Ordinances: Western Counties vs. Northeastern Towns

<table>
<thead>
<tr>
<th>Comparison</th>
<th>West</th>
<th>Northeast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of local jurisdictions with a CD ordinance</td>
<td>32%</td>
<td>&gt; 21%</td>
</tr>
<tr>
<td>Mean year of adoption</td>
<td>2002</td>
<td>&gt; 1997</td>
</tr>
<tr>
<td>Percent of CD ordinances adopted in jurisdictions with a planning department</td>
<td>93%</td>
<td>&gt; 27%</td>
</tr>
<tr>
<td>Mean percent of site area required to be protected</td>
<td>58%</td>
<td>&gt; 42%</td>
</tr>
<tr>
<td>Mean increase in development yield permitted as a bonus</td>
<td>71%</td>
<td>&gt; 31%</td>
</tr>
</tbody>
</table>
CONCLUSIONS:

1) Opportunities for wildlife conservation
   Adoption of CD ordinances is increasing rapidly

2) Need for biological expertise
   Conservation design and consultation requirements are relatively weak, with potential for development intensification

3) Next steps
   How are CD ordinances implemented in practice?
The Conservation Development Global Challenges Research Team is an interdisciplinary team of scholars and practitioners seeking to advance research on conservation development at a global scale. Housed within Colorado State University's School of Global Environmental Sustainability, our group includes fourteen collaborators from three universities and seven departments at CSU. We aim to transcend disciplines, schools of thought, and research perspectives and advance the science and practice of Conservation Development in the United States and around the world.
VISION

We aim to synthesize data on existing CD practice, establish a rigorous scientific basis for evaluating CD designs and policies, and engage with land use planning, development, and conservation practitioners to inform the design of future projects in the U.S. and around the world.

ACTIVITIES

• **Synthesis**: comprehensive review of the social, economic, and ecological dimensions of residential land development

• **Research**: case study of land use, home sales, and institutional context of >400 CD subdivisions in 19 Colorado counties

• **Outreach**: communicate results via website, presentations, workshops, and develop a collaborative learning network
COLORADO CASE STUDY
DATA COLLECTED AS OF MAY 2012

Colorado counties
- Data available
- Data unavailable
- No CD ordinance
- US Interstates

CD subdivisions

Legend:
- 0 40 80 Km
- 0 25 50 Miles
ACKNOWLEDGMENTS

FUNDING
Center for Collaborative Conservation
Robert & Patricia Switzer Foundation
National Association of Realtors
School of Global Environmental Sustainability
Society for Conservation Biology
USDA Forest Service

SoGES GCRT
Liba Pejchar
Chris Hannum
David Theobald
DeAna Nasseth
George Wallace
Josie Plaut

FUNDING (continued)
Kelly Spokus
Miranda Mockrin
Patrick Bixler
Richard Knight
Stephanie Gripne
Steve Laposa

RESEARCH ASSISTANCE
Elizabeth Hammen Auerbach
Steve Chignell
Elliot Dale
Lindsay Ex
Ashley Jackson
Sarah Maisonneuve
David Mueller

RESEARCH ASSISTANCE (continued)

ADVISORY BOARD
Ed McMahon
Heidi Kretser
Jeff Milder
Martin Zeller
Peter Pollock
Steven Kellenberg