

TITLE: Natural Resources Land Use Logic Model

Situation: Natural resources benefit all of society in a variety of ways including clean air, clean water, biodiversity, the economy, climate and human health and wellbeing. Decisions made by landowners, advisors and communities regarding natural resources management have a direct impact on these benefits. However, these decisions can have negative consequences when made with incomplete knowledge of short- and long-term implications. Educational programs that lead audiences to make informed decisions and to network with appropriate resources can contribute to and benefit healthy natural resources.

Purdue Extension Program Goals for 2019-2020: ANR Natural Resources and Land Use

Goal 1: To foster integrative decision making and natural resource management plans to sustain and improve resources for food, fiber, fuel and drinking water, promote economic growth, create recreation opportunities, improve air quality and health of forests, waterbodies, and other ecosystems, provide wildlife habitat, or conserve open space and wildlands.

Goal 2: To enhance Indiana stakeholder's understanding and decision making about land use planning, policies, and practices that enhance their local environment and community quality of life.

INPUTS What we invest	Outputs		Outcomes -- Impact		
	Activities What we do	Participation Who we reach	INCREASED AWARENESS AND EDUCATION (Short-Term)	CHANGES IN BEHAVIOR (Mid-Term)	IMPACT ON COMMUNITY AND SYSTEM (Long-Term)
<p>Purdue Investments</p> <ul style="list-style-type: none"> Extension Educators, Field Staff, Campus Staff Purdue Ag Centers and other properties Agricultural Communications Purdue Pesticides Program <p>Partnerships</p> <ul style="list-style-type: none"> State Agencies Federal Agencies IN Conservation Partnership Landowner/producer organizations Professional societies/organizations CISMAs HTIRC Industry organizations and associations Cooperatives Other Universities/Extension NGOs K-12 Schools 	<ul style="list-style-type: none"> Organize statewide conferences Organize regional conferences, summits, and workshops Create/compile online educational resources Create and organize educational programs Create and organize networking activities Develop and maintain promotional materials Develop demonstrations Provide technical assistance 	<p>Providers of natural resources information and advice (natural resources advisors, Extension educators)</p> <p>Individuals and entities who manage habitat (rural property owners, homeowners, public property managers, consultant foresters, arborists)</p>	<p>NRLU1.1 # of providers of natural resources information and advice who demonstrate knowledge gain regarding application of current science</p> <p>NRLU1.2 # of providers of natural resources information and advice who demonstrate new or improved skills to apply science-based information to job</p> <p>NRLU 1.3 # of providers of natural resources information and advice who aspire to submit CEUs to maintain their professional certification or license</p> <p>NRLU 1.4 # of providers of natural resources information and advice who demonstrate knowledge gain regarding data services, tools and resources pertaining to natural resources and environment</p> <p>NRLU 2.1 # of individuals who manage habitat who increase awareness of cost-share and technical assistance programs and resources</p> <p>NRLU 2.2 # of individuals who manage habitat who increase awareness of natural resource management issues (e.g. invasive species, air quality, climate, etc.)</p> <p>NRLU 2.3 # of individuals who manage habitat who demonstrate knowledge gains of current science as applied to resource management</p> <p>NRLU 2.4 # of individuals who manage habitat who demonstrate increased knowledge of land management plans</p> <p>NRLU 2.5 # individuals who manage habitat who aspire to implement practices benefiting natural resources</p>	<p>NRLU1 6.1 # of providers of natural resources information and advice who adopt a new practice or change/modify an existing practice in job</p> <p>NRLU1 6.2 # of providers of natural resources information and advice who submit CEUs to professional society</p> <p>NRLU1 6.3 # of providers of natural resources information and advice who use new knowledge/skill to modify consultations and recommendations related to natural resource concerns</p> <p>NRLU 7.1 # of individuals who manage habitat who contact professional advisors for natural resource management</p> <p>NRLU 7.2 # of individuals who manage habitat who adopt, improve or maintain stewardship practices</p> <p>NRLU 7.3 # of individuals who manage habitat who create or revise their land management plan</p>	<p>NRLU1 11.1 # of providers of natural resources information and advice who report improved job performance</p> <p>NRLU1 11.2 # of providers of natural resources information and advice who benefit from maintaining professional certification or license (e.g., improved pay, more job opportunities)</p> <p>NRLU1 11.3 # of clients/end users of providers of natural resources information and advice that adopt recommended natural resource practices</p> <p>NRLU 12.1 # individuals who manage habitat that use/reference long-term goals and planning</p> <p>NRLU 12.2 # individuals who manage habitat that indicate the plan directs natural resource management</p> <p>NRLU 12.3 # individuals who manage habitat reporting years of property managed under a plan</p> <p>NRLU 12.4 # acres of natural resources under management reported by individuals who manage habitat</p> <p>NRLU 12.5 # days of natural resources and land use reported by individuals who manage habitat</p> <p>NRLU 12.6 # hunting leases implemented as reported by individuals who manage habitat</p> <p>NRLU 12.7 \$ amount of revenue from timber sales, wood products manufacturing, and hunting leases as reported by individuals who manage habitat</p> <p>NRLU 12.8 \$ net value of timber stands (e.g., management leads to improved standing timber value because of increased growth of valuable trees)</p> <p>NRLU 12.9 # of individuals who manage habitat who have access to more financial benefits (e.g., grants, other funding)</p>

		<p>Developers of plans or policy (Communities, plan commissions, collaborative groups, government offices)</p>	<p>NRLU 3.1 # developers or plans/policy that demonstrate increased knowledge of planning processes</p> <p>NRLU 3.2 # developers of plans/policy that demonstrate increased knowledge of the role of natural resources in community planning</p> <p>NRLU 3.3 # developers of plans/policy that demonstrate awareness of public spaces as community assets</p> <p>NRLU 3.4 # developers or plans/policy that demonstrate increased awareness of implementing tools and resources in planning processes</p> <p>NRLU 3.5 # developers or plans/policy that increase skills to effectively engage residents in the planning process</p>	<p>NRLU 8.1 # developers of plans/policy that integrate natural resources into planning and policies</p> <p>NRLU 8.2 # plans/policies created that integrate natural resources into planning and policies</p> <p>NRLU 8.3 # developers of plans/policy that use tools and resources in planning processes</p> <p>NRLU 8.4 # tools/resources used by developers of plans/policy during planning processes</p> <p>NRLU 8.5 # plans/policies created by developers of plans/policy that include tools and resources</p> <p>NRLU 8.6 # developers of plans/policy that engage residents in planning processes</p> <p>NRLU 8.7 # residents engaged in planning processes</p> <p>NRLU 8.8 # meetings for resident engagement in planning processes</p> <p>NRLU 8.9 # communities engaged in planning processes</p>	<p>NRLU 13.1 # communities that implement natural resources in long-term planning and policies</p> <p>NRLU 13.2 # plans and policies implemented that have natural resources in long-term planning and policies</p> <p>NRLU 13.3 # communities that regularly implement opportunities for residents to participate in long-term planning processes and policies</p>
		<p>Engagement with outdoors (youth, K-12 teachers and other environmental educators, public)</p>	<p>NRLU 4.1 # participants aware of benefits of connecting with nature</p> <p>NRLU 4.2 # pre-post awareness gained of benefits of connecting with nature</p> <p>NRLU 4.3 # educators indicating increased awareness of benefits of connecting with nature</p> <p>NRLU 4.4 # participants indicating increased knowledge of how to apply outdoor activities in their lives</p> <p>NRLU 4.5 # participants indicating desire to participate in outdoor activities</p> <p>NRLU 4.6 # educators indicating increased knowledge on how to integrate natural resources into the curriculum</p> <p>NRLU 4.7 # attendees in outreach event/outreach station</p>	<p>NRLU 9.1 # participants participating in outdoor activities</p> <p>NRLU 9.2 # participants adopt natural resource-based lesson plans into teaching curriculum</p> <p>NRLU 9.3 # programs taught by NoT educators</p> <p>NRLU 9.4 # programs taught by Extension educators</p>	<p>NRLU 14.1 # youth that are more environmentally literate</p> <p>NRLU 14.2 # teachers teaching about nature</p> <p>NRLU 14.3 # teachers teaching NoT curriculum after 5 years</p>
		<p>Natural Resources based economy (businesses that are based on natural resources; e.g., commercial fisheries, primary and secondary wood products manufacturing)</p>	<p>NRLU 5.1 # of participants indicating increased knowledge of best management practices for businesses</p> <p>NRLU 5.2 # of participants indicating increased knowledge of sustainable production</p> <p>NRLU 5.3 # of participants indicating increased knowledge of value adding to natural resources</p>	<p>NRLU 10.1 # of participants that adopt best management practices and technology that result in more viable and sustainable natural resource-based businesses</p> <p>NRLU 10.2 # participants that integrate concepts that enhance/sustain natural resources</p>	<p>NRLU 15.1 # of created and maintained economically viable natural resource-based businesses</p> <p>NRLU 15.2 \$ revenue of businesses based on natural resources</p> <p>NRLU 15.3 # of operating natural resource-based businesses that maintain healthy, growing and sustainable economy</p>

<p>Assumptions</p> <ol style="list-style-type: none"> Continued institutional support for natural resources and land use Required staffing levels will not be reduced Extension can adapt to different models of program delivery with comparable use and effectiveness 	<p>External Factors</p> <ol style="list-style-type: none"> Influence of the economy and land value on the relative cost/value of natural resource management and land use Availability of government and NGO investments in cost share and technical assistance programs Significant changes in program delivery from outside influence Lack of control of future natural resource issues society will face
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Evaluation tools and metrics:

<u>Needs Assessment</u>	<u>Process Evaluation</u>	<u>Short-Term Evaluation</u>	<u>Medium-Term Evaluation</u>	<u>Long-Term / Impact Evaluation</u>
<p>Primary data collection of partnering agencies</p> <p>Secondary data sources to consider</p> <ul style="list-style-type: none"> ▪ Land use ▪ Land cover ▪ Demographics ▪ Ag stats ▪ Recreation and use surveys ▪ Census - https://www.census.gov/programs-surveys/fhwar.html 	<p>Purpose: Program improvement</p> <p>Sample approaches/questions:</p> <p>Ask questions and gather data during and/or at the end of the program.</p> <p>Ask participants what they liked and didn't like about the program.</p> <p>Ask participants to give suggestions for improvement.</p>	<p>Purpose: Measure knowledge, attitude, skill, or aspiration gained by program attendees.</p> <p>Sample approaches/questions:</p> <p>Did you learn something new about ____? Yes – No – Not Sure</p> <p>I learned something new about ____. SD D NO S SA</p> <p>Pre/post-test of knowledge</p> <p>I am aware of the benefits of connecting with nature.</p> <p>Before: not at all a bit some a lot After: not at all a bit some a lot</p>	<p>Purpose: Measure adoption of practices and changes in behavior by program attendees.</p> <p>Sample approaches/questions:</p> <p>Since the program, have you adopted best management practices for your land? Yes – No – Not Sure</p> <p>If yes, which practices did you adopt?</p> <p>Have you held meetings to engage local residents in the natural resources planning? Yes – No – Not Sure</p>	<p>Purpose: Measure changes in social, economic, civic and environmental conditions resulting from adoption of practices and changes in behaviors.</p> <p>Sample approaches/questions:</p> <p>As a result of the best management practices you adopted, have you experienced economic improvement or cost savings? Yes – No – Not sure</p> <p>If yes, what is the estimate of that economic improvement?</p> <ul style="list-style-type: none"> ___ \$0-\$100 ___ \$101-\$500 ___ \$501-1,000 ___ \$1,001-\$5,000 ___ \$5,001 -\$10,000 ___ Over \$10,000