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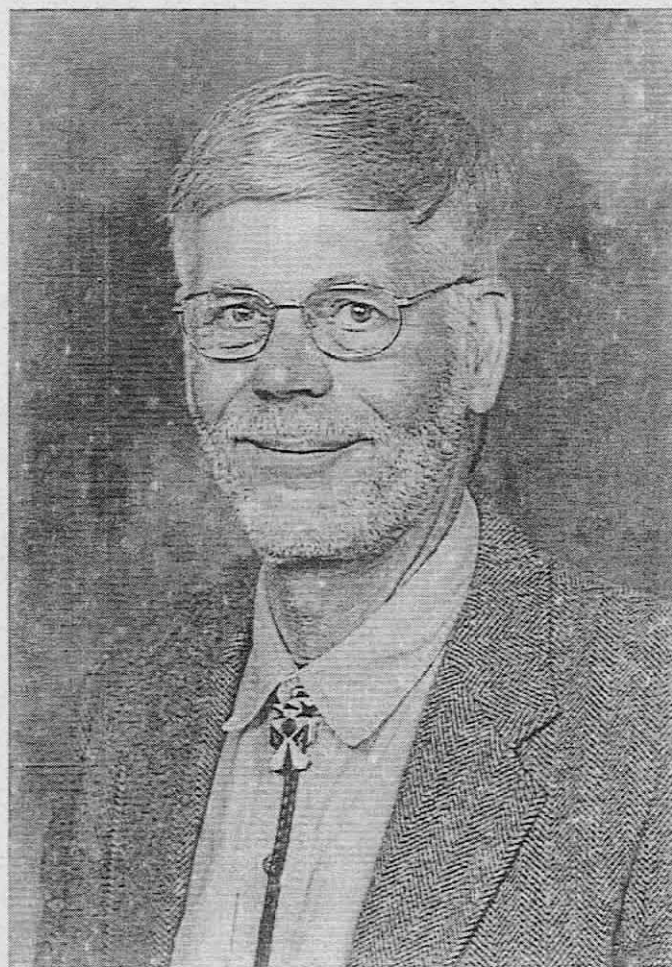
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The USU Honors Program presents
the twenty-sixth annual
LAST LECTURE



A Tale of Two Communities:
Managing the Ordeal of Change in the Intermountain West

Craig W. Johnson
Department of Landscape Architecture and Environmental Planning

Prologue

I am honored personally and as a landscape architect to be asked to present the 26th Annual Historic Lecture. The invitation provided a reason to reflect on this wonderfully eclectic, process-oriented, generally misunderstood profession of landscape architecture. It also affords me an opportunity to share a personal and professional perspective on growth, change, and their impacts on wildlife and habitat in the Intermountain West. Managing these issues has been the focus of my teaching, research and landscape practice for the last 30 years.

A TALE OF TWO COMMUNITIES MANAGING THE ORDEAL OF CHANGE IN THE INTERMOUNTAIN WEST

**PROFESSOR CRAIG W. JOHNSON
DEPARTMENT OF LANDSCAPE ARCHITECTURE &
ENVIRONMENTAL PLANNING**

This tale of wildlife and human communities is still in draft form, a work in progress, scratched out on a yellow note pad. Many of you will be involved in writing future chapters.

Prologue

I am honored personally and as a landscape architect to be asked to present the 26th Annual Honors Lecture. The invitation provided a reason to reflect on this wonderfully eclectic process-oriented, generally misunderstood profession of landscape architecture. It also affords me an opportunity to share a personal and professional perspective on growth, change, and their impacts on wildlife and habitat in the Intermountain West. Examining these issues has been the focus of my teaching, research and landscape practice for the last 20 years. Most importantly, the Last Lecture is an occasion to emphasize the interdisciplinary nature of landscape architecture, acknowledge our research and planning partners, and celebrate the ecological, visual, and spatial qualities of places we plan and design. Together we can help guide change toward a more sustainable future for both the human and wildlife community.

Chapter 1 - Human Community

- Native Americans consider themselves part of the natural community.
- They harvested a variety of species for food, clothing, shelter, implements, adornments, and ceremonial purposes. In some instances, hunting had significant adverse impacts on wildlife populations.
- Native Americans also manipulated the landscape using fire to alter vegetation to improve forage and browse for herbivores and flower plants gathered for food.

Chapter 1 - Wildlife Community

- Wildlife live in landscapes composed of patches, corridors, and a matrix. A mosaic of vegetation over large areas.
- Wildlife use all three of these components to meet their needs for food, cover, water, space and sites for reproduction.
- Each species occupies a niche.
- Populations of plants, animals, fish and invertebrates have co-evolved over thousands of years forming interdependent communities; communities that are dynamic, changing structurally and spatially over time in response to climatic, change, fire, floods, human activity, and other types of disturbance.
- Hull and Hull (1974) describe the pre-settlement plant community in Cache Valley as a verdant grassland, dominated by Bluebunch, Wheatgrass with little Sagebrush.
- Osborne Russell and other early 19th century trappers depict intermountain landscapes populated by bears, wolves, cougar, deer, sheep, bison, antelope, and beaver. Mormon journals contain reports of waterfowl and shorebirds in uncountable numbers in Cache Valley and Great Salt Lake wetlands.

Chapter 2 - Human Community

- Native Americans consider themselves part of the natural community.
- They harvested a variety of species for food, clothing, shelter, implements, adornments, and ceremonial purposes. In some instances, hunting had significant adverse impacts on wildlife populations.
- Native Americans also manipulated the landscape using fire to alter vegetation to improve forage and browse for herbivores and favor plants gathered for food.



- Trappers were the first Europeans to enter the Intermountain West. They did not see themselves as part of the natural community; rather, they came to exploit fur-bearing mammals. Their activities had significant short term impacts on several species and, to a less degree, on riparian ecosystems.



- In the late 1840's pioneers of European origin began to move into the Interior West. Many were community builders, particularly the Mormons. They perceived the landscape described by Hull and Hull and the trappers as a resource to be domesticated; they came here "to make the desert bloom."



- The evolution of human community in Cache Valley in the mid 1800s is typical of much of the rest of the Intermountain West.



- Most communities began as small clusters of simple structures located near a water source in areas of good soil and pasturage or valuable minerals.

- Around the community, hinterlands were converted into a patchwork of small fields separated by hedgerows or fences.

- Water was diverted from rivers and streams to irrigate crops and the orchards.



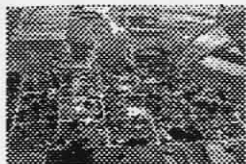
- Cattle, sheep and horses grazed lands unsuited for tilling.

- Forest resources were logged to build the community or exported for sale elsewhere.



- By the turn of the century most of the forests had been cleared, thousands of acres of habitat had been converted to agricultural and urban uses and stream flows in most creeks and rivers had been altered.

Conservation biologists refer to this phenomenon as fragmentation (the breaking up of large patches of habitat) - about which this tale will have more to say later.



- A pattern emerged: small compact, slow growing communities laid out on a grid pattern with tree-lined streets surrounded by a patch work quilt of fields, pastures, and orchards. The visual image:
 - A wooded oasis
 - A testament to tenacity
 - A spirit of place
 - A sense of community

As one would expect, the initial settlement of the Intermountain West had a profound impact on wildlife community and habitat as indeed it did in all regions of the country.



- Plant communities were altered and structure simplified; diverse communities replaced with less stable monocultures.



- Wolves, bears, eagles, and other large predators were either extirpated or driven into isolated refuge.



- Deer and elk populations expanded in response to plant succession. The recent explosion of the moose population is an example of an unpredicted change that has now become a game management issue.



- Populations of native area sensitive birds, like the sage and sharp-tailed grouse, declined.



- Several exotic game birds were introduced and flourished.

- Over time, a fragile equilibrium was reached within this recently modified landscape.

- That fragile equilibrium was about to be tested. The year 1945 brought the end of World War II; war weary couples wanting to start families, low interest loans, affordable automobiles, cheap gas, highways under construction and rural electrification.

- With 20-20 hindsight, it's now evident that all the ingredients were in place to trigger an explosion of urban sprawl, a phenomenon that once launched, has continued to gain momentum to this day.

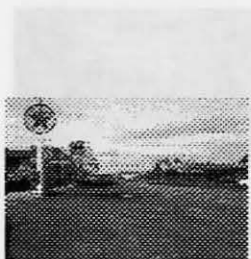
Chapter 3 - Fast Forward Human Community, 1990s

Headlines read - Sleepy Western Communities Struggle to Deal with Growth.

Utah, Idaho, Nevada, and Montana are among the fastest growing states in the country.

In Utah, an average of 10,000 acres of working landscape and wildlife habitat have been converted to urban uses in each of the last five years. Much of this land is in the foothills, critical winter range for big game.

- "Wilding" - a term coined by futurists to describe a special kind of sprawl - building trophy homes on large lots in natural settings - is a recent phenomenon in the interior west. Reference Galitian County, Montana, Sun Valley and Franklin County, Idaho.
- A Sonoran institute economist projects this phenomenon will last for the next 30 years.
- Commercial centers, which had prospered since the 1900s, are spiraling into decline. Business interests continue to follow consumers into the suburbs.
- Highway, road and utility systems expanded into complex networks necessary to support the ever-expanding suburbs; the network in turn triggers further expansion.
- Dams, like Jordanelle, are constructed to supply water to thirsty communities. Ironically 65% of summer water use in Salt Lake Valley goes to irrigate landscapes dominated by exotic plants.
- Drainage characteristics of urban watersheds have been dramatically altered. Water from roofs, roads, and parking lots no longer percolates into the ground; it runs off or is put into pipes causing downstream flooding - often followed by stream channelization.



Chapter 4 - Fragmentation

- What I've just described is the second wave of fragmentation of the landscape. This one caused by the unplanned or poorly planned expansion of human community; the consequences for wildlife and working landscapes are frightening.
- Consequences of fragmentation
 - Loss of original habitat
 - Reduced patch size
 - Increased edge
 - Increased patch isolation
 - Loss of disturbance regimes

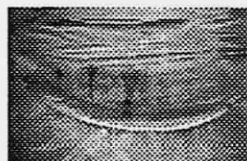
Chapter 5 - Why Should We Care?

- Since the advent of human consciousness we have pondered over our relationship with the natural world.

- To Native Americans, plants and animals are kin.

- In the cannon of western Judeo-Christian thought, arguments for caring date back to the 6th century. Saint Benedict taught that true conservation was more than preserving nature, it involved active stewardship of all the God had entrusted to us.

- In the 13th century, Saint Francis proposed an even more radical concept, democracy among all God's creatures - a concept that in those days bordered on heresy - it nearly cost him his life.



CORRIDOR BENEFITS

- Environmental services
- Social
- Social benefits
- Economic benefits

- In our secular age these arguments are less persuasive, but there are more than a few bottom line reasons to conserve wildlife and their habitats:

Environmental
Habitat
Social
Economic

- If the number of ballot initiatives, green space conferences and recent spiritually based conservation advocates are any indication, conserving bio-diversity is now on computer screens viewed by an increasing number of American citizens.

Chapter 6 - Basic Principles for Managing Wildlife Community - There is hope!

Conservation biologists Reed Noss, Michael Soule, and others note two basic principles for mitigating the affects of fragmentation:

- Increase effective habitat area
- Increase connectivity between habitat areas

This diagram by Adams and Dove graphically illustrates these principles, conserve bio-diversity "hot spots" and link them with corridors.

Conservation biologists emphasize the importance of being pro-active, conserving or restoring patches and corridors to define a wildlife habitat context, then deciding where other uses should occur. It's really about defining a green infrastructure to support human community.

Chapter 7 - Principle Application at Varying Scales - Continent, Region, State, and Local

- What do these concepts look like when applied to real world situations?
- The Wildlands Project has prepared a plan for the recovery of an entire ecoregion - Yukon to Yellowstone using the basic concepts put forth by Noss, Soule and others.
- Closer to home, the Sky Island Alliance has developed a plan to link the mountain ranges of southern Arizona and New Mexico into a Nature Reserve Network to protect biodiversity in this region of the Southwest.



- The Florida Game and Fresh Water Fish Commission, together with the Wildlands Project and Nature Conservancy, have crafted a plan of integrated patches and linked corridors for the State of Florida. A specific segment of this plan is the restoration of the Everglades. The US Army Corps of Engineers is spending between 4-20 billion dollars restoring the Kissimmee River as part of that effort.

Floridians have earmarked over a billion dollars for land acquisition and easements to begin the process of realizing this plan.

- These are visioning plans. They may take a generation or more to realize. But then, consider we arrived at where we are today in only 150 years. It's about our perception of time.

I'm reminded of a statement I heard on the Discovery Channel made by a Native American woman. She was commenting about the reintroduction of bison on her reservation. She said, "Would you be willing to wait 100 years for your people's prayers to be answered? We were!"





- The same patch/corridor connectivity concepts can be applied to smaller sites; for example, 3.5 miles and 350 acres of the Jordan River Parkway in Murray.



Based on plans prepared by LAEP Department graduate students, Murray City restored wetlands and a gallery forest of cottonwood trees, re-established a riparian corridor and welcomed wildlife back into the community.

Chapter 8 - Planning Concepts for Human Community

- As we've seen, unplanned or poorly planned human community has been the source of many of the problems affecting the wildlife community.
- The question is: Can we plan human communities that meet our needs and respect the needs of wildlife and the ecosystems that support them I believe the answer is yes. Here are some examples:



- Plan communities inside or around the green infrastructure of wildlife community and working landscapes, Columbia, Maryland, 1970s.



- Limit community growth, encourage infill, redevelopment, recycle declining neighborhoods.



- Plan communities that meet the needs of all inhabitants by involving them in the planning process.



Chapter • Plan communities with a spirit of place, places for people, places to come to not flee from.

Perhaps in the final analysis the Native Americans, St. Benedict, and St. Francis had it right, we really are one community. Planning for the future of our community will require

• Control the auto, make communities walkable, and support mass transit.

My generation of Americans created many of the problems you will be asked to solve. The past two generations of landscape architects expanded the universe of our profession beyond rural estates, parks and playgrounds. We have provided you with a paradigm: an interdisciplinary orientation, and a process to address

• Bring nature, native plants, and natural process back into our communities.

The problems you face are complex, the challenges enormous, but the approach I believe is quite direct. You know biologist Rene Dubois from his book, *A God Within*. Years ago read the book of

• Utah has begun to address the issues of human community with the Envision Utah Project - a laudable first step that incorporates many of these ideas.

I wish you well.

However, you will not on the visioning plan for the Wasatch Front that wildlife community is not mentioned in the legend and is not emphasized in Envision Utah's more specific literature.

We still have a way to go.

Please Contact: Dave Bell, Craig Johnson, NRCS, Mike Tummon, Richard York, Utah Art Department, and Ryan Weston.

Chapter 9 - In Process

Perhaps in the final analysis the Native Americans, St. Benedict, and St. Francis had it right, we really are one community. Planning for the future of one community will require interdisciplinary cooperation and the very best intellect and intuition we can bring to the challenge.

My generation of Americans created many of the problems you will be asked to solve. The past two generations of landscape architects expanded the concerns of our profession beyond rural estates, parks and parkways. We have provided you with a paradigm, an interdisciplinary orientation, and a process to address tomorrow's problems. You in turn will build on the foundation for future generations of professionals.

The problems you face are complex, the challenges enormous, but the approach I believe is quite direct. To quote biologist Rene Dubos from his book, A God Within, "learn to read the book of external nature and the book of our own nature to discern common patterns and harmonies." Learning to discern common patterns and harmonies may just be the key to managing the ordeal of change in the Intermountain West.

I wish you well.

Thank you.

Photo Credits: Dave Bell, Craig Johnson, NRCS, Mike Timmons, Richard Toth, USU Art Department, and Ryan Weston.

Mid-Morning Fishing on the Henry's Fork

A Short Allegory About Passion, Process and Persistence in Planning

An old friend and I sat on a warm grassy bank that angled out into the Henry's Fork. It was the best location on this reach of river to look for big fish and watch the water and listen as its secrets flowed by. Watching and listening were part of our angling ritual while waiting for the first Mayfly hatch of the morning.

Our occasional conversation drifted back to Lee Wolf, Gary Lawson, and other western fly fishing legends. These early diviners of the river and its trout were our absentee mentors. They were full-time anglers and part-time authors who divulged a few Henry's Fork secrets in infrequent articles and obscure books. We'd read their writings and spent the last 25 years trying to figure out what Lee and Gary and other old timers had left untold. We mapped the river's runs and riffles and favored fish lies, charted hatching times and water temperatures. Each year we thought ourselves wiser, but in the end concluded that the Henry's Fork, like most things in life, particularly our wives, would remain inscrutable. My friend summed it up, "love your wife, love this river, love a rainbow -- you'd damn well better love a mystery."

While reminiscing and waiting, we set a goal for the day; two rainbows over twenty inches. Around 10:30 the hatch began starting slowly then erupting as it always did into a blizzard of bugs. From someplace unknown tree swallows arrived, hundreds of them swooping, skimming, snatching duns from the sparkling surface. We walked down to the river, caught a few May flies and compared them with artificials in our fly boxes. I chose a PMD, he chose a parachute Adams. We tied them to our leaders.

Trout began to rise, tailing, sipping emerging Mayflies from just beneath the surface. Time to find a big fish. A large black-backed rainbow rising regularly was holding in a lie behind "The Rock" on the outer edge of the rip line. A prime candidate.

As was the custom, we flipped a coin to see who got the chance to stalk the first big fish. My friend won. He cinched up his waders and quietly made his way toward "The Rock" and rising rainbow. I watched as he gauged the drift speed of floating flies and checked the sun and wind angles. He paused to time the trout's feeding rhythm then slowly moved into casting position.

I saw my friend transcending time into the magic of the moment, awash in bright morning sun. With a few false casts he played out line in graceful loops; it flowed effortlessly in measured lengths. Wrist and rod, wind and river, friend and fish - synergy. The line shot forward then fluttered, fly softly kissing the ruffle tops. It skipped and danced as it glided toward the big rainbow. The fish rose, drifted under the fly and followed down stream a ways. It didn't strike... Now nervous and out of place, the fish flashed back upstream to its favored lie. A second cast, a third, a fourth. No strike. On the fifth cast, the fish did not rise, it did not follow.

My friend turned toward me and smiling in resignation, reeled in his line, hooked the fly on the keeper, tucked the rod under his arm and for a long moment looked back at the lie behind "The Rock." He shrugged his shoulders, turned and waded back to the bank out of the moment into time and the roar of the river.

As we walked together back up the slope to the overlook, we speculated about what went wrong: wrong fly, wrong size, wrong leader weight, all the usual suspects; but came to no conclusion. I suggested the wrong guy won the coin toss, my friend didn't smile.

Suddenly the wind picked up ending the hatch and with it the swallow's ballet. We would be back again tomorrow. Circumstances would be different, but our approach, except for a new twist or two, would be the same. And if we caught that big black-backed rainbow tomorrow, we'd let it go - we'd let it go.

As we walked upstream and neared the car I noticed a sign, one I'd never seen before. It read:

2000 Acre Ranch for Sale
Ranchette Potential
Ryan's Rainbow Reality
Last Chance, Idaho
206-421-7351

The sign was nailed to a corner post of an empty corral behind a vacant pasture next to the river. It spoke of change; change in the winds that swirled up and down the Henry's Fork, change that would test the strength of community. Would we embrace the opportunity to plan for change together, ranchers and realtors, fishermen and farmers? Would we be wise? Would we "learn to read the book of external nature and the book of our own nature to discern common patterns and harmonies" as Dubos implored in A God Within? They were the substance of a truly sustainable future. Or would we each selfishly pursue our own satisfactions, ignoring the wisdom of the water speaking softly as it flowed past the post with the For Sale sign. The black-backed rainbow resting deep in the river behind "The Rock" requests that we all learn to discern common patterns and harmonies, listen to the river, and consult the God within - - - so does the rancher.

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CRAIG W. JOHNSON

Professor Craig Johnson joined the USU Landscape Architecture and Environmental Planning faculty in 1966. He received a BLA degree from Michigan State University and an MLA degree from the University of Illinois. In 1983 he earned an MS degree in Fisheries and Wildlife Biology from South Dakota State University. Professor Johnson received an ASLA Award of Merit as an undergraduate and is a member of Phi Kappa Phi and Beta Alpha Sigma, national honorary societies. He served as President of the National Council of Educators in Landscape Architecture in 1981. In 1990 he was elected as National Distinguished Member of the National Honor Society in Landscape Architecture, Sigma Lambda Alpha.

Professor Johnson's areas of expertise include: land reclamation, urban forestry and urban wildlife planning. He received an ASLA Award for Outstanding Contributions to a Better Environment for his part in land reclamation research at the University of Illinois. He has authored two books on urban forestry, one on land reclamation, and one on planning and design for urban wildlife and one on conservation corridors. While a graduate student at South Dakota State University, he was a research assistant for the South Dakota Cooperative Wildlife Research Unit. Professor Johnson has also authored numerous articles which have been published in national and international journals. In 1988 he was recognized by the College of Humanities, Arts and Social Science as Humanist of the Year, in part for his on-going landscape restoration research on the Jordan River. He is frequently invited to be a visiting critic at other universities.

Professor Johnson is a licensed landscape architect in the states of Idaho, Minnesota, and Utah where he is actively involved as a design and planning consultant. Twelve projects on which Professor Johnson has collaborated or been project director have received state and national ASLA, APA, and AILA awards including an ASLA Gold Medallion Award. In 1982 he was awarded the Utah Chapter of ASLA Distinguished Service Award. Professor Johnson is a member of the Society for Ecological Restoration.

Professor Johnson has been selected Department Teacher of the Year ten times. In 1991 he was recognized as the University of Arizona, College of Renewable Natural Resources' Outstanding Teaching during his sabbatical leave at that institution. In 1984 and again in 1996 he was selected as Teacher of the Year for the College of Humanities, Arts and Social Science and in 1988 was named Utah State University International Professor of the Year. He is a member of the University Liberal Arts and Sciences board and serves on a number of University committees.