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A R T I C L E
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Transition Scenarios via Backcasting

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Abstract

This article offers "transition scenarios" as a variation on the backcasting technique. The variation in essence developed a shorter-term version of a long-term set of scenarios that had been developed just a few years prior. The scenarios themselves are only briefly highlighted as the principal emphasis is on the methodological variation. A full version of the scenarios is part of a separate "Global Technical Report" publication (Hines, Schutte, Romero, & Bengston, 2019). The variation is offered in the spirit of an experiment in the hope that it might be useful to futurists and others confronted with a similar methodological challenge of working with a client who "already has" scenarios that are judged to be outside of a useful planning horizon.

Keywords: Foresight, Scenarios, Backcasting, Transition Scenarios, Horizon Scanning.

Introduction

The Houston Foresight program worked with the USDA Forest Service, Strategic Foresight Group to establish an ongoing horizon scanning system (Hines, Bengston, Dockry, & Cowart, 2018). The core team for the project was guided by two scientists from the Forest Service working with a principal investigator from the Houston Foresight program. The principle investigator was assisted by an alumnus as project manager and a rotating set of 1-3 graduate students each semester.

A key purpose of the horizon scanning system was to identify emerging issues. The system was designed to eventually be fed by volunteer scanners in the forestry community, who were not likely to have any background

in foresight. Thus, there was a need to communicate the concept of emerging issues analysis and why it is useful (Dator, 2018). The early volunteers were participating because they were passionate about the future of forestry. They were eager to know what the scanning would be used for, even though they were not directly involved in the process of identifying emerging issues.

The core team decided it would also be helpful to contextualize the emerging issues - and the scanning itself - by having a set of scenarios that would help facilitate strategic conversation about the future of forestry (Ertel & Solomon, 2014; van der Heijden, 2005). For instance, the emerging issues could be analyzed and understood in terms of how they related to the scenarios by exploring how the emerging issues might fare in different scenarios. It was not intended to shift the purpose of the scanning system from scanning to monitoring as these are two distinct activities. Scanning is broadly exploring for signals of change, while monitoring is looking for indicators of a specific topic. Rather it was to provide context for the scanning. One of the key challenges in scanning is assessing whether a potential scanning hit or signal of change is novel, plausible, or important. Having a set of scenarios provides a foundation upon which scanners have a more tangible basis for making an assessment along those dimensions.

Before proposing or embarking on a project to develop scenarios, it is good practice to check for previous scenario work. From previous experience the principal investigator has observed that it is often discouraging for members of an organization to do scenarios or a foresight project with one set of consultants, and then have new consultants come in and recommend re-doing that work with their approach. If the scenarios were fairly recently done, and the topic had not changed too much, they might be used, perhaps with an update or refresh. An important caveat is that refreshing scenarios could be judged as defeating the learning purpose of the process of doing scenario planning (Burt & Chermack, 2008; de Geus, 1998; van der Heijden, Bradfield, Burt, Cairns, & Wright, 2002). In our case, the team felt that using the existing scenarios as background context for scanning was appropriate, i.e., the "process learning" purpose was not essential for this application.

The Forest Service team members had indeed participated in a project that created a brief set of scenarios for North American Forest Futures out to the year 2090 (Bengston et al., 2018). This distant timeframe makes sense given forestry's slow clockspeed: the rate a sector introduces new products, processes, and organizational structures (Fine, 1998). But the team was interested in identifying emerging issues that would be influential closer to the present than 2090, that is, goals within the strategic planning scope of the organization. The team felt that having a set of scenarios with a shorter timeframe would be more useful to the scanning system's purpose of identifying emerging issues to stimulate more near-term policy responses.

The work of the original North American Forest Commission (NAFC) 2090 scenarios team was judged to be quite good and useful. The challenge, therefore, was to see if there was a way to connect the NAFC 2090 scenarios closer to the strategic present.

The "transition scenarios" variation of backcasting was therefore developed out of necessity to provide future context for the horizon scanning. Since the timeframe of previously developed scenarios was judged to be too distant to be useful to the purpose of the horizon scanning project, the team sought to develop a shorter-term (2035) versions of the 2090 scenarios.

Methodology

The team decided to try a backcasting approach. Lovins (1977) first employed the method in his search for achieving an energy-efficient future, although Robinson (1982) is generally credited with naming and codifying the method. In backcasting, one looks back from the viewpoint of specific images of the future (Kok, van Vliet, Bärlund, Dubel, & Sendzimir, 2011; Quist, Thissen, & Vergragt, 2011; Robinson, 1990). Forecasting extrapolates from the present into the future, while backcasting starts from the future and works backward to the present. The typical approach

in backcasting involves identifying a preferred future -- a future that the client aspires to or would like to achieve (Bezold, 2009) -- and working backwards to develop milestones along a pathway that connects to the present (Government Office for Science, 2017). The backcasting literature generally emphasizes developing the preferred future and working backwards from that to identify the pathway. This is intended to help identify potential policy actions in the present, but there are generally few specifics on how to develop this pathway. Dreborg (1996, p.818) even suggested that "backcasting should rather be seen as a general approach than as a method." However, despite lack of specifics, the essence of all approaches remains developing the pathway from the future back to the present. For instance, Kok et al., (2011) suggest three steps in constructing a backcast:

1. Select a vision used as end-point.
2. Indicate obstacles and opportunities.
3. Define milestones and interim objectives.

Strong et al. (2007) suggested that the key element for constructing the pathway back from the future involves the identification of signposts. They define a signpost as a "recognizable potential future event that signals a significant change." Recognizable means that reasonable people would agree on whether the event has happened or not. The term signal is used because the signpost may embody the significant change or it may only predict or enable it (Strong et al., 2007, p.2). Signposts are identified at particular points in time to construct the pathway. However, the transition scenarios approach does not seek to identify signposts – or the obstacles, opportunities, milestones – but rather focuses on the state of the drivers of the visionary scenarios. It first identifies the status of drivers at points along the pathway from the visionary scenarios back to the present. It further develops the combinations of those drivers into the transition scenarios, and finally analyzes the drivers from the present, or baseline scenario, forward to ensure continuity from both the future and the present.

The NAFC 2090 scenarios were developed using Bezold's (2009) Aspirational Futures method, which builds upon Dator's (2009) four archetypes or generic futures:

- Continued growth, or the official future
- Collapse of the current order
- Discipline, refocus the economy and society on survival and fair distribution, and not on continued economic growth
- Transformation, focuses on powerfully transforming power of technology.

The team concluded that while the literature provided some general guidance for backcasting, it had not been applied to our specific case (or at least has not been published), thus the need to craft a variation of backcasting to fit our particular needs. Some of the major differences that distinguish our project from a "typical" backcast:

- Our backcast started from three scenarios set in the year 2090, rather than starting from a single preferred future. The fourth scenario, the continuity, or baseline future in the Framework Foresight method used at the Houston Foresight program, was not backcast since it is basically an extrapolation of current trends and mainstream plans and projections without any surprises (Hines & Bishop, 2013). Our view was that this baseline would break down by 2035 and essentially give way to one of the alternative futures – or some combination thereof. In the present the alternative futures are essentially third horizon ideas or images of what the next baseline could eventually be (Curry & Hodgson, 2008). The slow clockspeed or rate of change in the forestry sector would suggest that this transition to a new baseline – one of the three alternative futures – would be taking place between 2035

and 2090. We use the dates to give a rough sense of time perspective and do not put any specific credence on those years.
- Our backcast aimed at the year 2035, rather than backcasting all the way to the present. We simply needed to map the pathway back from 2090 to 2035, rather than identify specific events, signposts, or directly identify specific policy actions. It is worth noting that the potential for exploring policy actions was considered to be a useful future activity.

To map the backcast pathway, the key drivers of change from the three of the NAFC 2090 scenarios were used. As noted above, we did not backcast the fourth scenario, but rather slightly revised it to extend out to 2035 to in effect "meet" the transition scenarios. The team's view was that the baseline of forest future could plausibly extend out to about 2035, although it clearly could break down sooner. The logic is that as the baseline is breaking down, the alternative futures would start to emerge in part or whole.

Each of the key drivers was articulated in the three transition scenarios, but of course they played out differently in the different scenarios. Because they are defined differently in each archetype, they are represented in a generic fashion in the list below, more akin to variables than classic drivers. That is, they are more like categories than actual descriptions of change – the descriptions varied according to the archetype. It may be more accurate to use the term "categories of drivers." Twelve driver categories were used:

- Societal Values
- Relation to Nature
- Economy
- Climate Change: Temperature Increase
- Climate Change: Impact on Forests
- Forest Agencies: Wildfire & Mission Shift
- Forest Agencies: Organizational Form
- Forest Agencies: Leadership Culture
- Technology
- Ecosystems*
- Industry*
- Stewardship*

The three asterisked driver categories were not specifically called out in the NAFC 2090 scenarios, but were added to the analysis: ecosystems, industry, and stewardship. These drivers were identified in the forest futures horizon scanning project.

To ensure the faithfulness of the trajectories along the timeline between the two scenario sets (2035 and 2090), midway descriptions were identified to act as beacons or checkpoints – not to be confused with traditional backcasting signposts -- in 2060. The final outcome was intended to be a new set of scenarios set in 2035, which would enable the identification of more immediate implications that have greater relevance for policy and planning in the present.

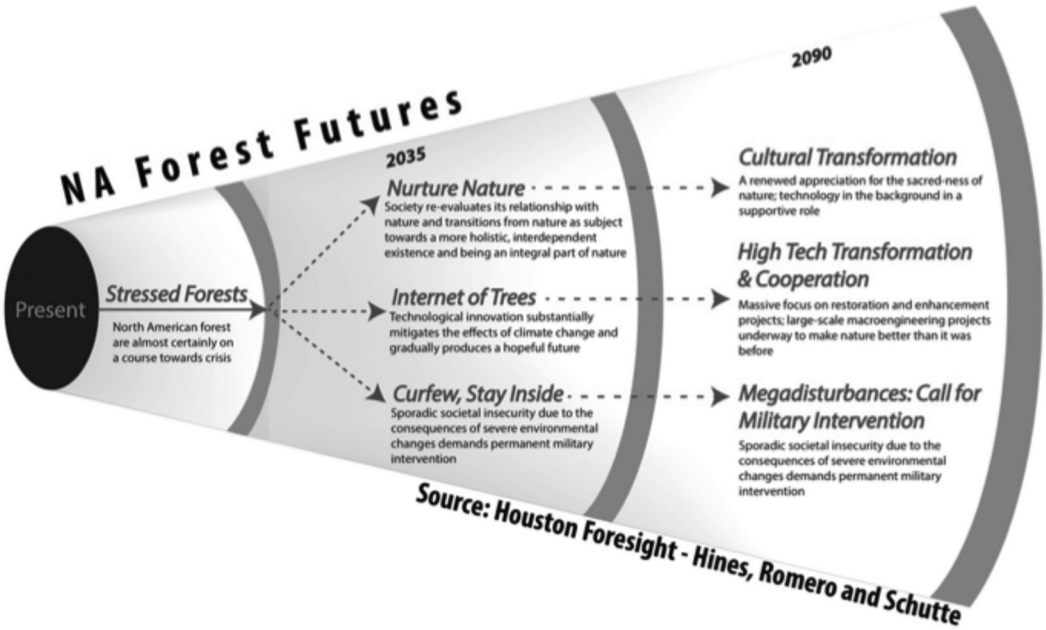

Figure 1. North American Forest Futures Backcasting Scenarios

The NAFC 2090 scenarios were developed using Bezold's (2009) Aspirational Futures approach, which employs archetypes to guide the development of the scenarios. The Houston Foresight program uses slightly different terminology for the archetypes (Hines & Bishop, 2013; Hines, 2014). For the sake of completeness, Dator's (2009) Four Futures mentioned earlier are also included in Table 1 to highlight the correlation between concepts.

Table 1. *Comparing Archetype Approaches*

2090 NAFC Scenario	2035 Transition Scenario	[Houston Foresight's Framework Foresight	Bezold's Aspirational Futures	Dator's Four Futures
Stressed Forests	N/A	Baseline	Zone of Conventional Expectation	Continued Growth
Megadisturbances Call for Military Intervention	Government Intervention: Curfew, Stay Inside	Collapse	Zone of Growing Desperation	Collapse
High Tech Transformation and Cooperation	High Tech Transformation: The Internet of Trees	Transformation	Aspirational	Transformation (via technology)
Cultural Transformation	Cultural Transformation: Nurture Nature	Transformation	Aspiration	Discipline

The archetypes provide guardrails to guide the development of the scenarios. A consistent set of drivers is calibrated to fit each archetype. In short, how does each driver play out in each archetype: baseline, collapse and the two versions of transformation? The archetypes provide cohesion for the logic of the scenario – one must not "violate" the archetype by having any driver play out in a manner inconsistent with the archetype. In hindsight, the use of the archetype approach proved a fortunate choice for backcasting, as the archetypes provide guidance in terms of how to imagine a driver playing out in different times – it must be consistent with the archetype theme.

The steps of the variation employed were as follows:

1. The year 2060 was chosen as a midway stop between 2035 and 2090.
2. The scenario backcast team identified the first driver in the first 2090 scenario.
3. It then imagined the status of that driver in 2060 – again using the archetype as a guide or boundary condition for how it might play out.
4. After that, the team started from 2060 and once again imagined the history of that driver, but this time in 2035, 25 years prior to 2060.
5. The team then tested the flow by starting with each driver's status in 2030, moved to 2060, and finally to 2090 – evaluating whether the driver's pathway seemed plausible.
6. Next, that same driver was identified in the next 2090 scenario. Since the scenarios are by definition distinct stories, the outcome of the driver would be different in this second scenario.
7. The same process was followed: the team imagined this driver first in 2060, set its status, and then did the same for 2035. The plausibility of this pathway from 2035 to 2060 to 2090 was then evaluated and any needed adjustments were made.
7. Finally, the state of the first driver was also identified in the third scenario, and worked back to 2060 and 2035 and tested for plausibility.
8. With three pathways for the driver category now sketched out, the team looked across the pathways to make sure that that the drivers were set in a manner consistent with their outcome in the 2090 scenarios and that the stories were still distinct enough from one another.
9. This process was repeated for each of the 12 drivers in each of the three scenarios (Tables 2, 3 and 4 below).
10. Once the team was satisfied with the consistency and plausibility of the pathways back to 2035, these 2035 drivers were used to craft a set of scenarios of the year 2035. The specific pathway "status" of each driver along the way is shown in a table accompanying each scenario below.

The 2035 Scenarios in Brief

Each scenario is briefly described below. The project produced a more detailed description (Hines et al., 2019), but given the focus on methodology here, only brief synopses are provided. A high-level implication for the Forest Service follows each synopsis. The three alternatives each respond to the crisis that the baseline suggests is inevitable. Since the team did not backcast the baseline, the set of drivers is not included for that scenario archetype.

Baseline: Stressed forests

North American forests are almost certainly on a course towards crisis.

The baseline future is likely one of budget cuts and political turmoil, and a worsening ecological situation. Instead of being a sink for CO2, deforestation has actually led to a net release of forest carbon into the atmosphere. Forest leaders are likely be put in a position of "doing more with less,"

and being blamed for deteriorating conditions despite their best efforts. Climate change is likely to exacerbate current negative trends: increases in wildland fires, the spread of invasive species, and a host of insect pests and pathogens. The public is not likely to come to the rescue. Forests are out-of-sight, out-of-mind, as visits to the forest are projected to gradually decline, except for an undesirable growth in squatters. There is some hope that automation will increase the productivity of the forest products sector, and that increased profits could be fed back into forest management. But more likely is a growing incursion of investor and corporate groups buying up large swaths of timberland and lobbying to keep government "out of the forest." The baseline view of the next decade or so is a challenging one. In our view, it is almost certainly heading toward crisis.
What it means: Live to fight another day, and do what can be done to support the long game.

Collapse: Government intervention: Curfew, stay inside

Sporadic societal insecurity due to the consequences of severe environmental changes demands permanent government and military intervention in the form of martial law and active involvement in disaster mitigation.

This scenario describes widespread societal denial of climate change and a decade-long lag in governmental response. Government only intervenes when pressured by the accumulating cost of frequent environmental disasters and the growing scarcity of commodities. Mega forest fires, migrating tropical disease and frequent environmental disasters lead many states to request permanent federal aid. As global political power shifts from the West to the East, the United States withdraws its substantial global military force as policies redirect military effort towards alleviating the consequence of environmental issues back home. Forests become a substantial focus of both the military and organizations related to disease control. Simultaneously, the tech entertainment industry and smart homes enable a societal retreat towards indoor activities -- outdoor nature is increasingly experienced as hostile. The military now focuses on protecting the public from the environment while corporate forestry interests are protected with para-military technology.
What it means: This is a worst-case scenario which is the least desirable for the USFS, as they are in a position having to follow orders, while the best interests of the forest are not necessarily being served.

Table 2. *Key drivers, Government Intervention: Curfew, Stay Inside*

KEY DRIVER CATEGORIES	Government Intervention		
	2035	2060	2090
Societal Values	Insecurity fosters a neo-nationalism with values of safety and security.	Protectionism first; some concern to mitigate refugee crises.	Heightened emphasis on security.
Relation to Nature	Temporary spike in nature tourism, while finding indoor refuge in everyday life.	Increasingly migrate indoors as high-tech homestead is a shelter from environment.	Growing alienation from a hostile, failing nature.
Economy	New agricultural zones open up and older ones dwindle; initial reaction to climate change of raising taxes and boosting environmental innovation investment had perverse effect of creating a green energy bubble.	Food collapse after climate catastrophes; nations isolated and in constant state of emergency.	Collapse and insecurity as the norm for decades now.

Climate Change: Temperature Increase	A 2.5 degree C increase; efforts start to focus on long-term cooling/reversing.	A 3.5 degree C increase; efforts to slow down had some effect.	4 degree C increase by 2090.
Climate Change: Impact on Forests	Many forested areas moving toward conversion to non-forest ecosystems.	Substantial rearrangement of forest landscape by invasive species and changing vegetation.	Many forests beyond thresholds; some convert to shrublands and grasslands.
Forest Agencies: Wildfire & Mission Shift	Traditional firefighting methods unsustainable; temporary assistance from other agencies; ecosystem services face steady budget decline; added mission, protecting humans from tropical disease, potential harmful pathogens & forest-born pandemics.	Permanent, continual collaboration with military for wildfire mitigation; ecosystem services severely hampered by declining budget; DOH & CDC launches own division responsible for mitigating forest-related (tropical) disease, pandemics and insect plagues.	Military completely assumes firefighting role and control of disease outbreaks in conjunction with aggressive CDC. Forest Service declines sharply.
Forest Agencies: Organizational Form	Bureaucratic; Change Office becomes most prominent division.	Network with other departments; frequent DOD & DOH intervention during incidents.	Hierarchical: military controlled.
Forest Agencies: Leadership Culture	Technical – handling constant emergencies in many states.	Adaptive – from primarily mitigation to some strategic adaptation.	Military / Technical.
Technology	CRSPR tree-editing; survey drones; disease monitoring.	Logging robots; automated tree planting; security drones.	Synthetic biology.
Ecosystems	Drought, wildfires, invasive species, insects and diseases; extinctions.	Changing face of forests based on new regional weather.	Megadisturbances push many forests beyond thresholds; no visitors.
Industry	Spike in recreation as society; timber industry suffers and new technologies are developed to sustain supply.	Recreation replaced by virtual reality as forests become dangerous; genetically modified timber production.	No forestry recreation. Timber corporations control many remaining forests growing genetically modified trees.
Stewardship	Inability of central government to respond formation of smaller networks and inter-agency alliances.	Issues so severe that a top-down approach is needed and being forced down in a military fashion.	Risk management: military focus solely to mitigate issues and protect people from the environment.

High tech transformation: The internet of trees

Technological innovation substantially mitigates the effects of climate change and gradually produces a hopeful future.

This scenario describes a future in which the effects of climate change gradually foster a technological revolution in which both governments and business participate. There is a steady increase in international cooperation as technological innovation builds momentum on several fronts. Initial projects supported by venture capital and entrepreneurial competition spur growth in the green economy revolution as well as Internet of Things applications. With a strong focus on land and forest restoration, this scenario introduces the Internet of Things to the forest with increasingly effective predictive analysis capabilities focused on nature rehabilitation. Forests are valued as a carbon storage method and there is an increase in the use of CRSPR applications to subdue new climate-change related pests. This era of a powerful technological "rehab" of nature on an international level, leads to a renaissance of the forest.

What it means: Learning how to play the economic/ entrepreneurial game.

Table 3. *Key drivers, High Tech Transformation: The Internet of Trees*

KEY DRIVER CATEGORIES	HIGH TECH TRANSFORMATION		
	2035	2060	2090
Societal Values	Steady indifference; some acceptance of responsibility for community and future generations.	Greater acceptance of responsibility for community and future generations; population growth slows globally.	Values shift complement tech innovation in moving toward sustainability/ quality of life.
Relation to Nature	Indifference to nature; experienced more through technologies such as virtual reality.	Shifting to augmented realities: integration of the virtual and the real; high tech experience of nature.	Harmonizing human design & technology with nature.
Economy	Realization that current growth trajectory is unsustainable.	Emphasis on tech solutions to environmental problems.	Moderate growth with large investments in technical innovation.
Climate Change: Temperature Increase	1/5th of greenhouse gasses from deforestation, degradation, and megafires. Global forests are net emitters of CO2.	Progress in dealing with forest degradation and megafires; forests are CO2 sinks again; a 1 degree C increase in global temps.	Collapse of West Antarctic ice sheet spurs global efforts; 2 degree C increase.
Climate Change: Impact on Forests	Sharp increase in heat waves, droughts, wildfires, more intense storms, flooding and the spread of tropical diseases into temperate zones.	Some progress in mitigation, damage control and restoration, but some processes cannot be reversed.	Renewable energy technology & geoengineering breakthroughs limit impacts.
Forest Agencies: Wildfire & Mission Shift	Beginning restoration of wildlands/natural systems, e.g. Global Reforestation Initiative.	Shift from regional to more global activities; significant progress in restoration.	Global Reforestation Initiative restores agencies' finances & range of activity.

Forest Agencies: Organizational Form	Participation in more international agreements triggers re-assessment of proper organizational form.	Significant percentage of employees now work with other nations and in regional consortiums.	Network & ecosystem model.
Forest Agencies: Leadership Culture	After years of "muddling through" a constituency for serious change develops.	Emphasis on innovation, in particular stimulating and expecting employees to contribute.	Adaptive.
Technology	Renewables increasingly displace fossil fuels; research on tech fixes, e.g. artificial photosynthesis for hydrogen production; small-scale fusion, no-till farming and scoping of massive geoengineering programs.	Physical, digital, and bio techs converge as prior research programs bear fruit, e.g., massive geoengineering, also seaweed farming, micro-bubble generators, etc.	Environmentally advanced & renewable energy technologies.
Ecosystems	Increases in drought, wildfires, invasive species, diseases, megastorms, and megafires.	Progress toward abundance, efficiency and rapid ecological recovery.	Abundance, efficiency and rapid ecological recovery.
Industry	Largely exploitive and seeking opportunities to improve efficiency in resource extraction.	Significant shift toward green technologies, mitigation, and land restoration.	Industry partnership aligned with objectives of forests as key role in dealing with climate issues.
Stewardship	Extensive cross-organizational collaborative networks linking public, private, non-profits, and citizen groups dedicated to healthy forests.	Global commitment allows MA to make forest health a public priority, restoration and renewal customized to local climates and ecologies.	Forest health a public priority; people living there in small, modular houses assembled and disassembled on temp sites.
Political	Inability of central government to respond effectively takes a toll on public funding.	New platforms enable citizens to be more engaged with governments.	Ecosystem model integrates agency and citizen volunteers with entrepreneurs to propagate new ideas.

Cultural transformation: Nurture nature

Society re-evaluates its relationship with nature and transitions from nature as subject towards a more holistic, interdependent existence and being an integral part of nature.

The future outlined in this scenario is primarily supported by a change in societal values. There is a strong paradigm shift from the industrial worldview of controlling nature towards an ecological worldview centered on living with nature. As these new values take center stage, they become more visible at the grassroots level than in institutional fixes or policy changes. All facets of individual living such as transportation and energy usage become ecofriendly and they gradually

gain momentum at community and city level, for instance in city-wide carbon capture efforts. The scenario also introduces the time of the social entrepreneur and the boom of the climate-tech industry, but now the focus is primarily on human agency instead of mere scientific, technological solutions. Technology serves human endeavors and this approach leads to the growth and evolution of the Forest Service and its mission. This value change is eventually reflected on an international level as regions such as North America enter coalitions focusing on megafire-fighting and conservation efforts.

What it means: Public education and outreach is crucial; building interest; winning hearts and minds.

Table 4. *Key drivers, Cultural Transformation: Nurture Nature*

KEY DRIVER CATEGORIES	CULTURAL TRANSFORMATION		
	2035	2060	2090
Societal Values	Postmodern values (e.g. self-expression, tolerance, sustainability) clashing with status quo modern values (e.g. achievement, growth).	Postmodern values now the status quo; integral values emerging that favor functional outcomes over "talk".	Emphasis on welfare of future generations, entire community of life.
Relation to Nature	Environmental crises spur efforts to decrease their environmental footprint.	Integration of science and spirituality as natural and social sciences complement each other.	Growing influence of native worldview of humans as part of nature rather masters of it.
Economy	Social entrepreneurs and enterprises increasingly entering the mainstream.	Automation opens conversation about a steady low growth approach.	Moderate to low growth a deliberate strategy.
Climate Change: Temperature Increase	Global temperature increase by 1.2 C.	An international agreement sets a 1.5 C increase goal.	Largest peacetime effort in history limits temperature rise to 1.5 C.
Climate Change: Impact on Forests	Changes introduced to forest but results will only be seen in the long term.	Forest are slowly recovering and improving.	Impacts on North American forests are now modest.
Forest Agencies: Wildfire & Mission Shift	Cooperative fire-directing treaty still in its infancy.	The NA Fire Management Cooperative has proven successful; stimulates expansion to new sectors.	Wildfire paradigm shift of learning to live with fire.
Forest Agencies: Organizational form	Hierarchical.	Network.	Ecological.
Forest Agencies: Leadership Culture	Mostly managerial: focused on stability, but stakeholders pushing for change.	Entrepreneurial: Creating practical adaptive changes.	Visionary.

Technology	Smart data, micro data centers, AI and machine learning.	Human augmentation, smart dust, and social technologies.	IT merges with bio: Quantum biology and biomimicry.
Ecosystems	Highly disturbed ecosystems; early efforts to improve.	Disturbances are calming down/less severe.	Symbiotic relationship between forests and the communities around them.
Industry	Forest productivity and recreation use down due to environmental crisis.	Tourism and productivity numbers improving.	High eco and spiritual tourism integrated with circular economy approach.
Stewardship	Compartmental and highly specialized stewardship approach.	"Forest Steward" positions involving agency and public created to manage forests.	Elders, guardians and stewards all have active roles in forest management

Conclusion

The proposed "transition scenarios" variation of backcasting described here was developed to make very long-term scenarios more accessible by crafting a medium-term version of them. We offer the approach to others facing similar situations. The approach also suggests the potential for making greater use of existing scenarios and avoiding the usual reinvention of the wheel that drains productivity and resources. It could provide a corrective mechanism to re-contextualize scenarios that a client team felt were "too far" into the future. It may suggest a more vivid way to build long-term scenarios by highlighting "versions" of the scenarios along the way.

These 2035 transition scenarios provide a more tangible context from which policymakers can craft responses to avoid scenario(s) they consider undesirable and work toward scenario(s) they consider preferable. For the horizon scanning team, the scenarios provide further context for their scanning. A scanning hit can be evaluated for how it relates to the scenarios. It may be "tagged" to indicate that it suggests movement towards a particular scenario. In providing further context for the horizon scanning, as well as a more useful planning horizon for policymakers, we believe this backcasting process to be a quite promising approach.

Transition scenarios may also stimulate greater attention to and use of the backcasting method. The method is well-suited to assist with a likely growing demand to craft images of preferred futures. As the future continues to grow more complex, uncertain, and with increasingly severe challenges ahead (Slaughter, 2010) there is a paucity of compelling images to work toward, noted nearly 50 year ago by Polak (1973). There is opportunity for futurists to develop these much-needed images, which in turn might stimulate demand for backcasting, i.e., how do we get to these desirable images. The variation developed here does not specifically address this issue, but it does suggest that there is room to develop and expand the use of backcasting in the futurist's tool kit.

Finally, the transition scenarios approach described here offers specific steps and the case example provides a clear illustration of how to apply it. Of course, it is not yet clear how useful these transition scenarios will turn out to be in practice. In fact, the literature review found that in general the backcasting method is mostly limited in the scope of its application and the steps of the method are vaguely defined. By sharing innovative approaches like the transition scenarios the foresight community may explore the benefits and limitations of this method even further.

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